

FIG. 1

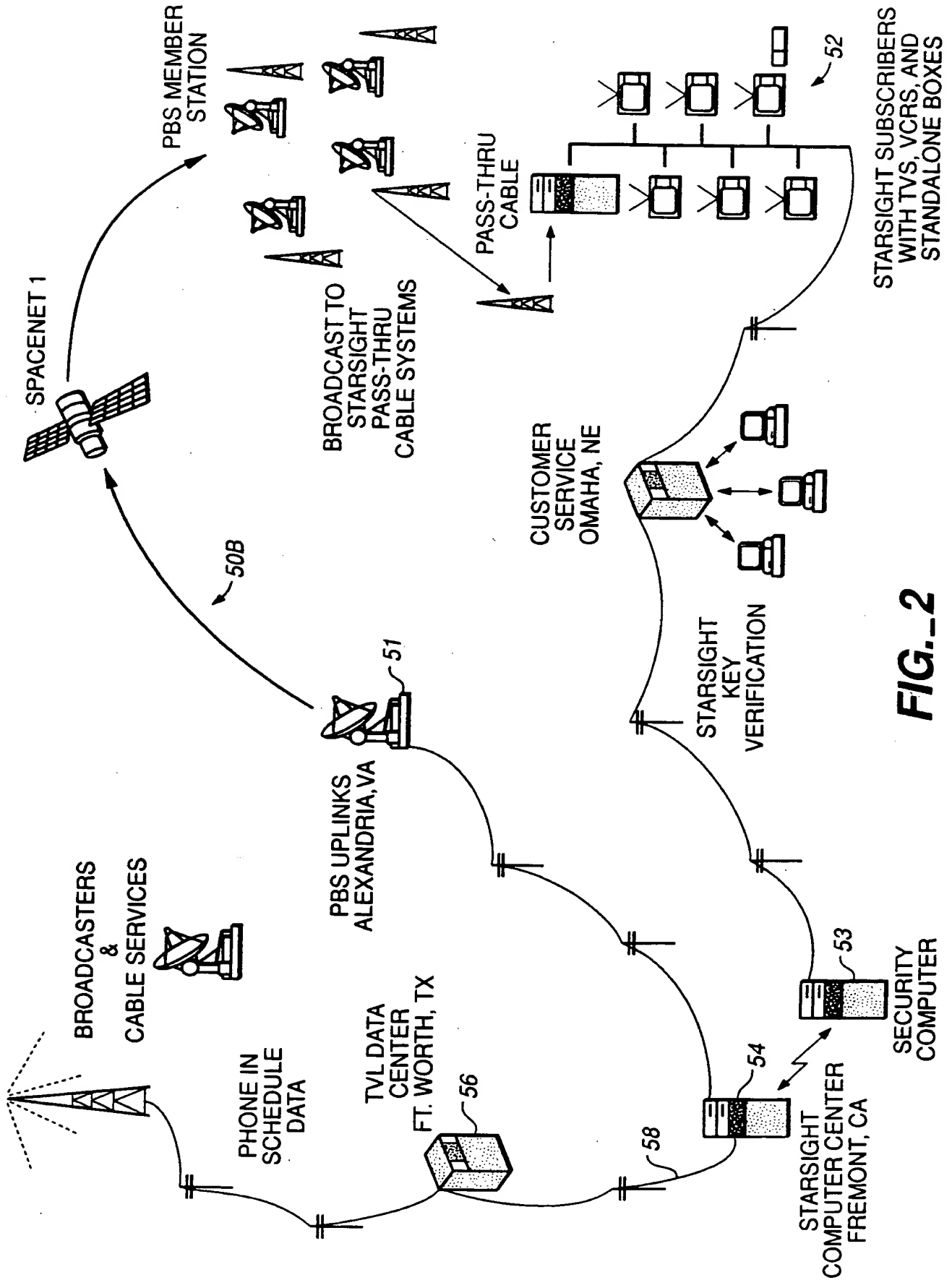


FIG. 2

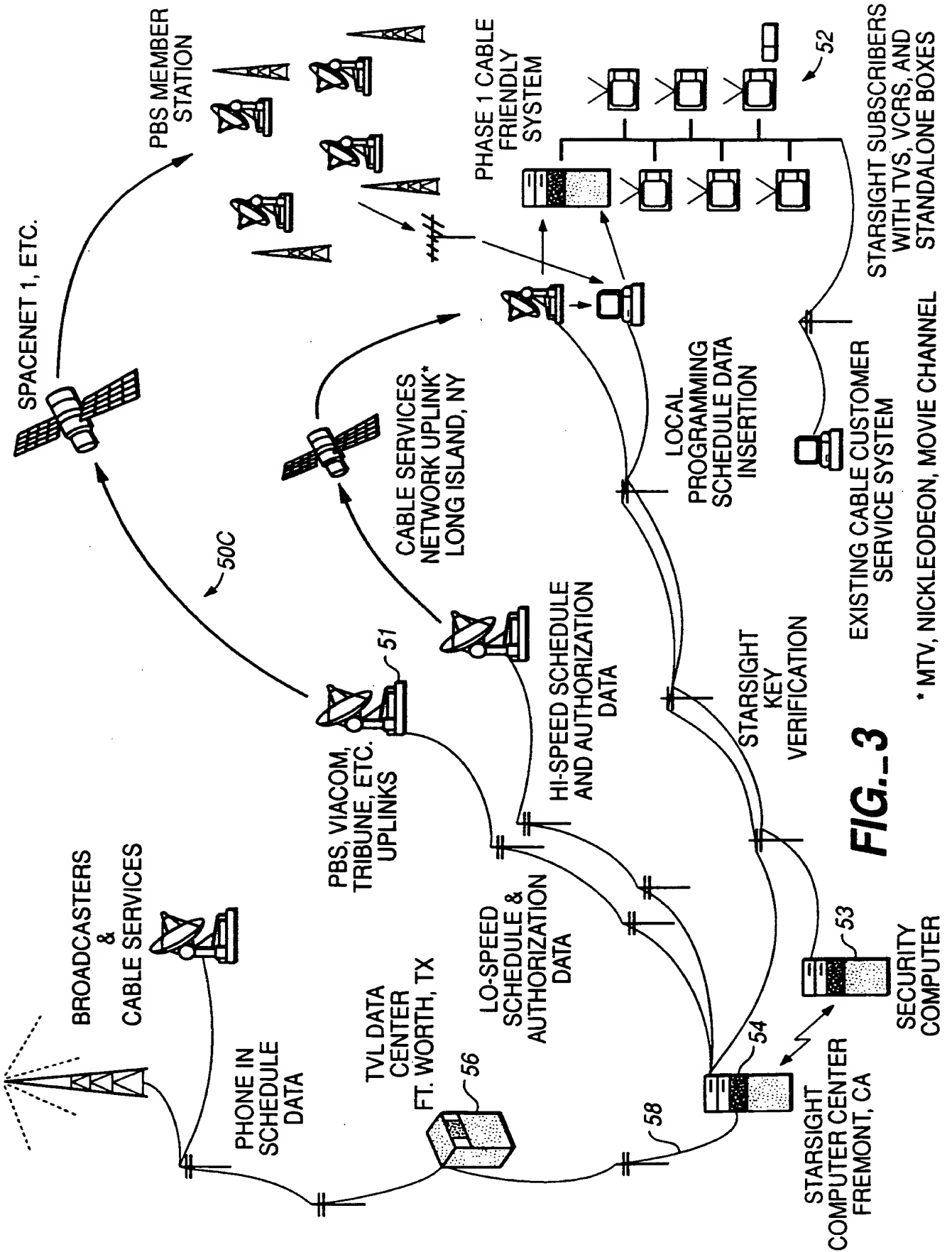


FIG. 3

* MTV, NICKLEODEON, MOVIE CHANNEL

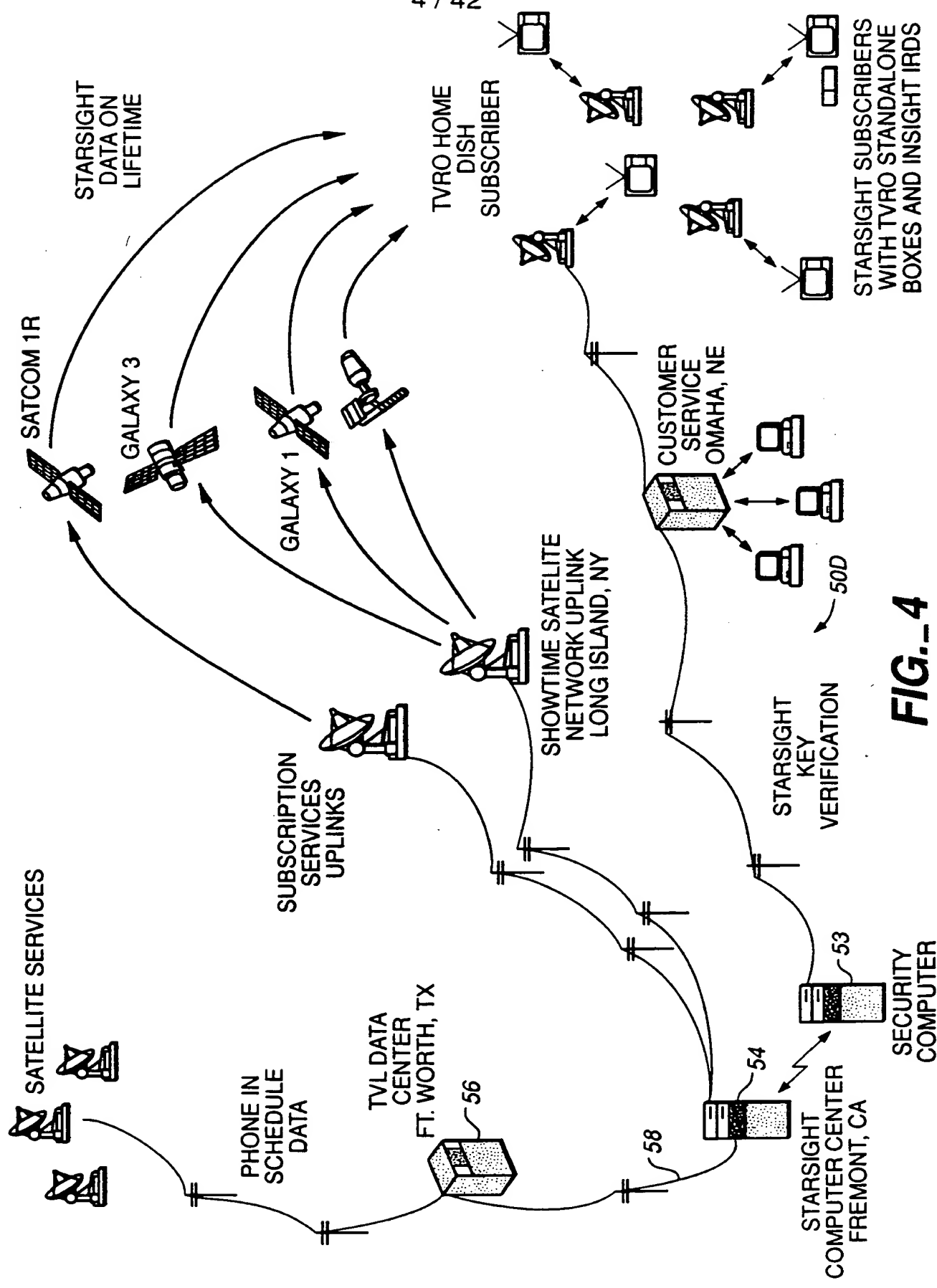


FIG. 4

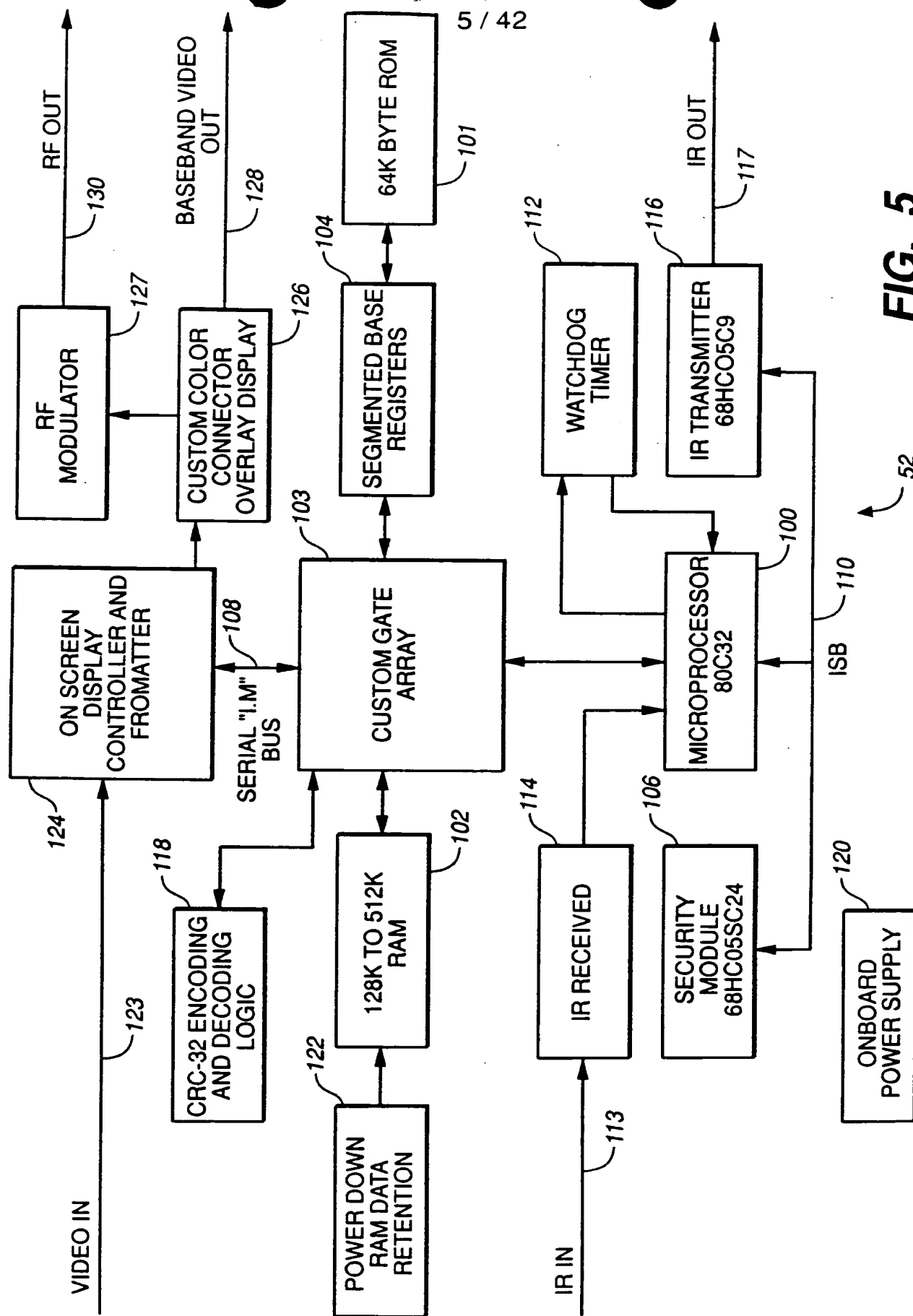
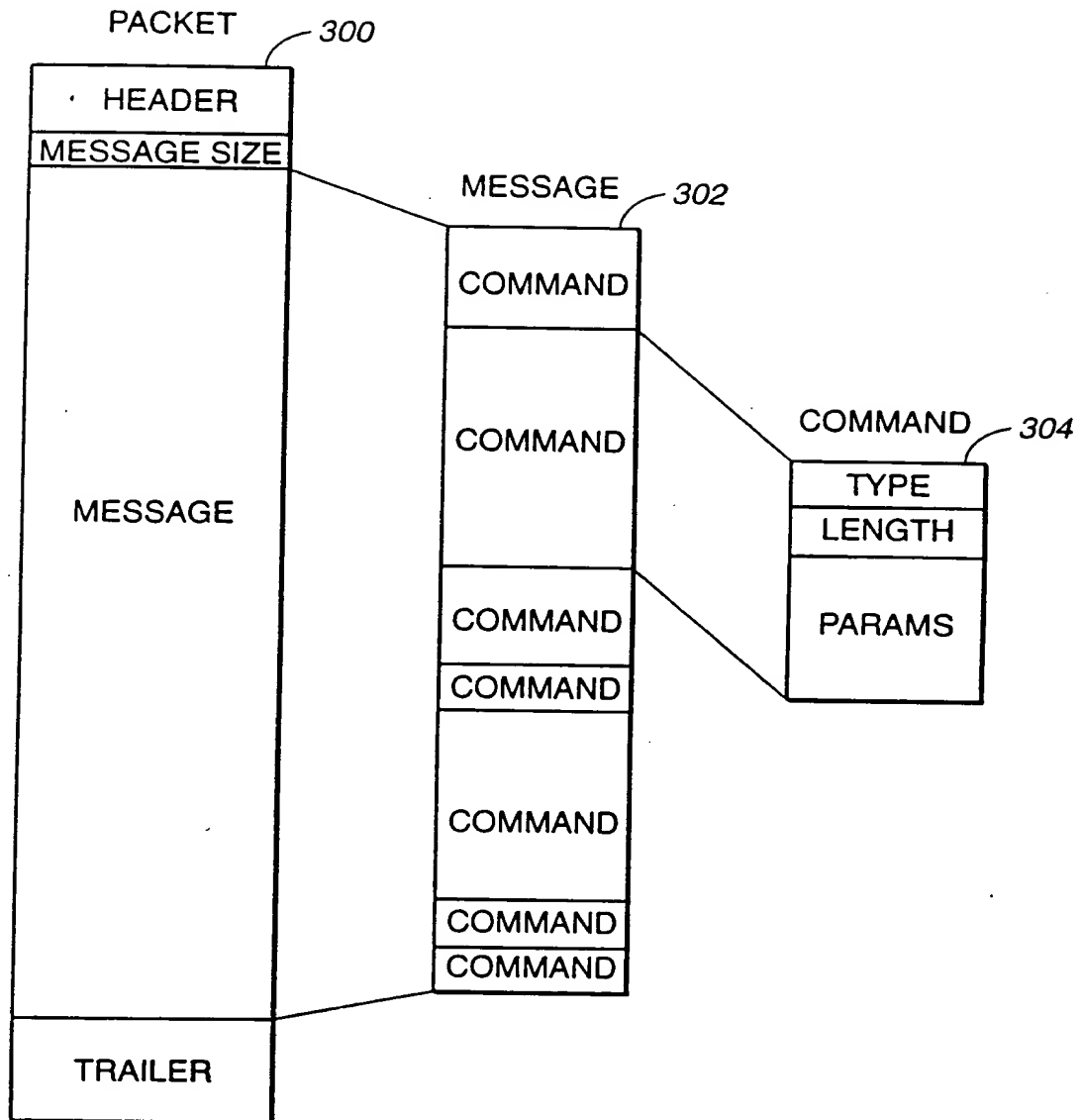
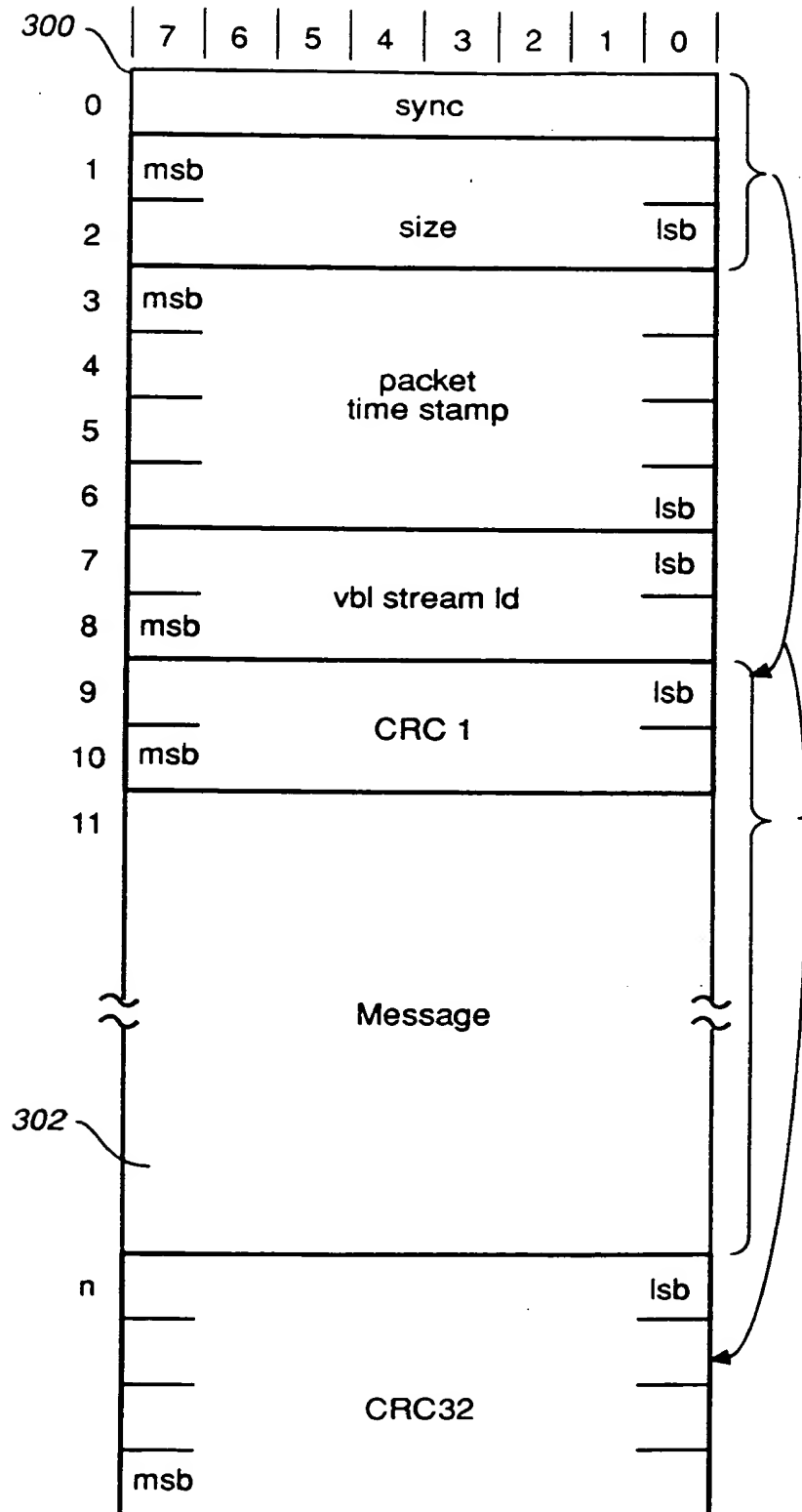
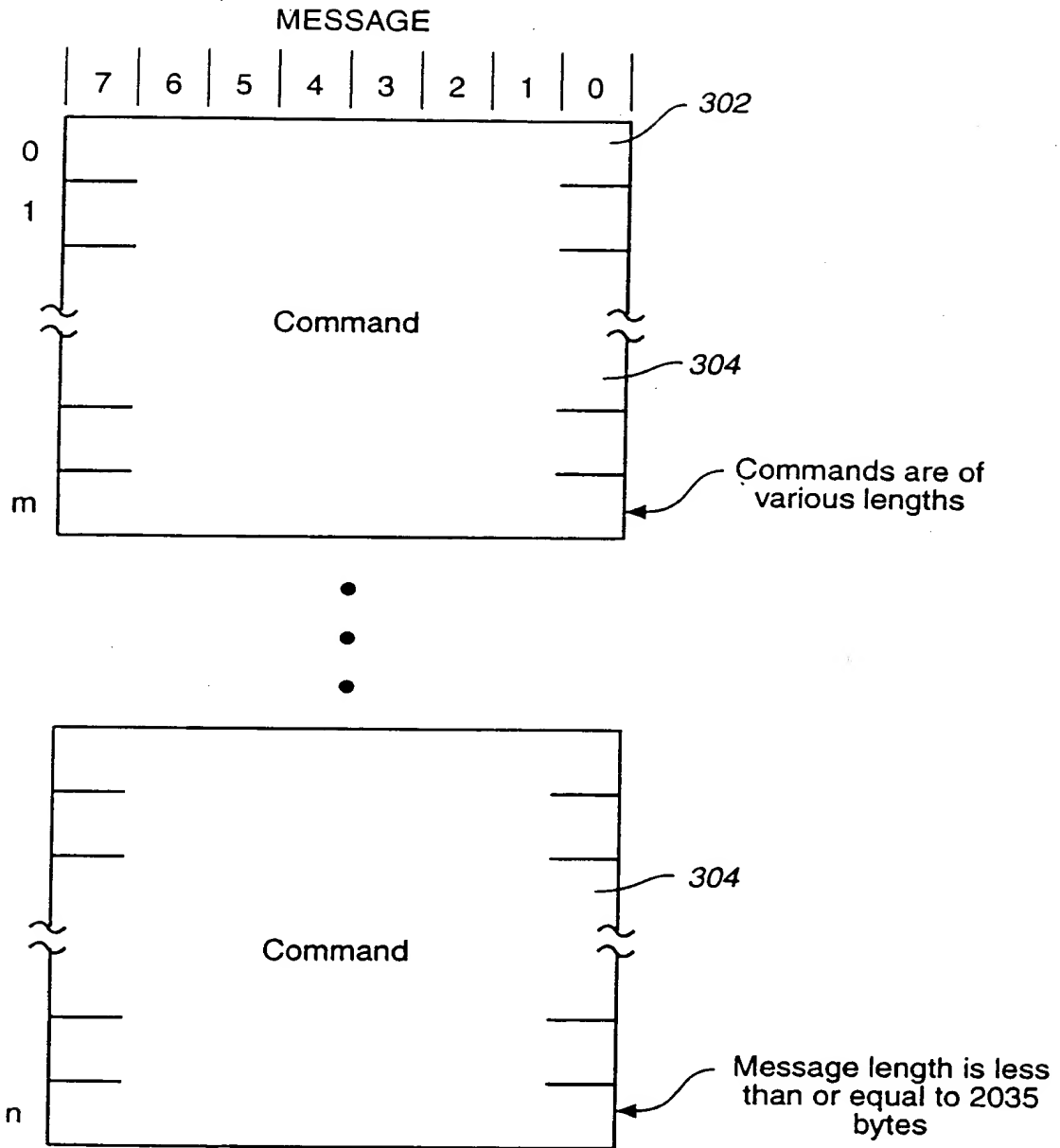


FIG. 5

**FIG. 6**

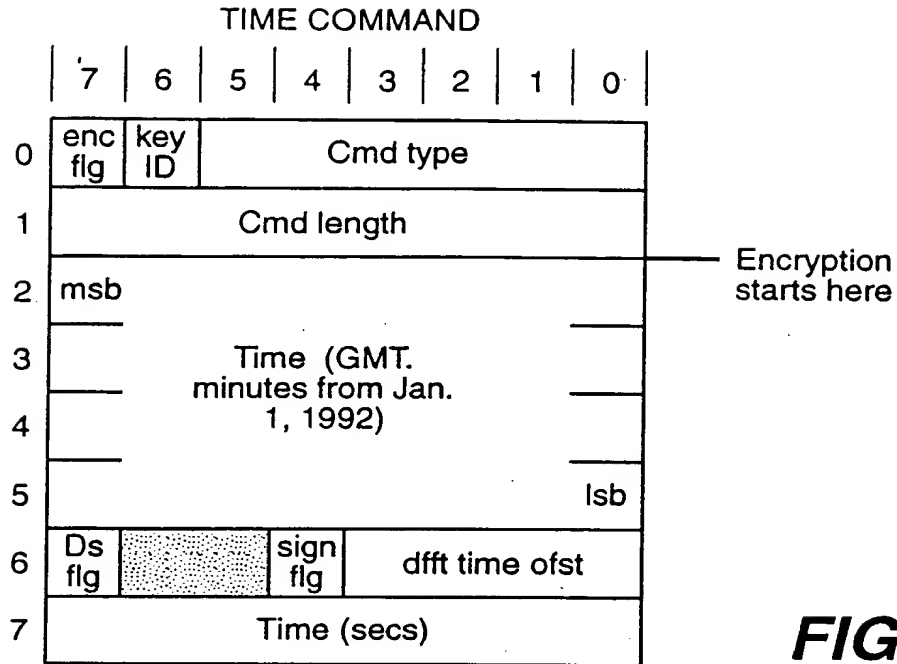
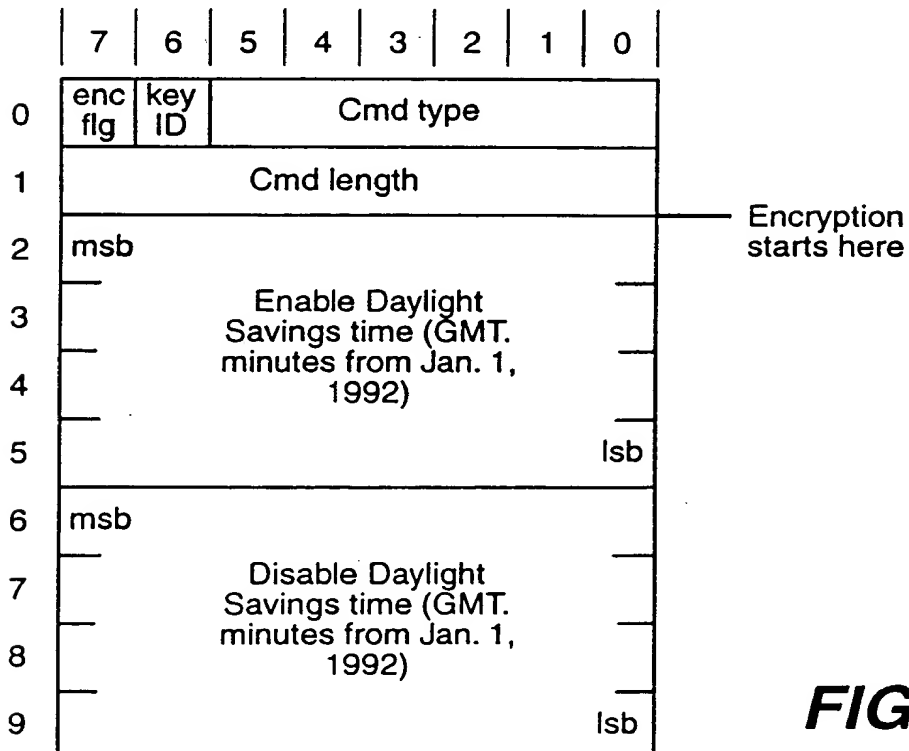
PACKET

**FIG. 7**

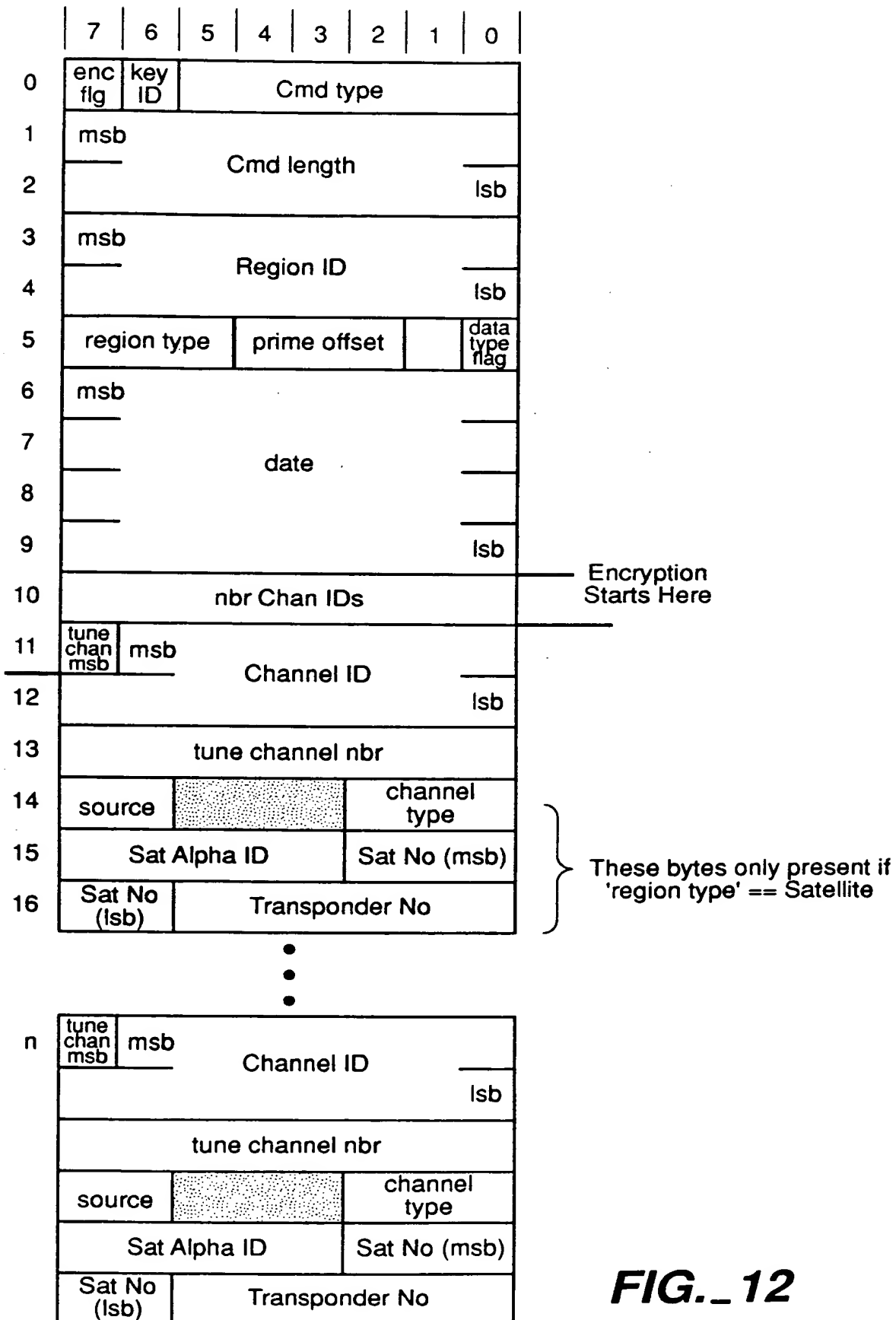
**FIG. 8**

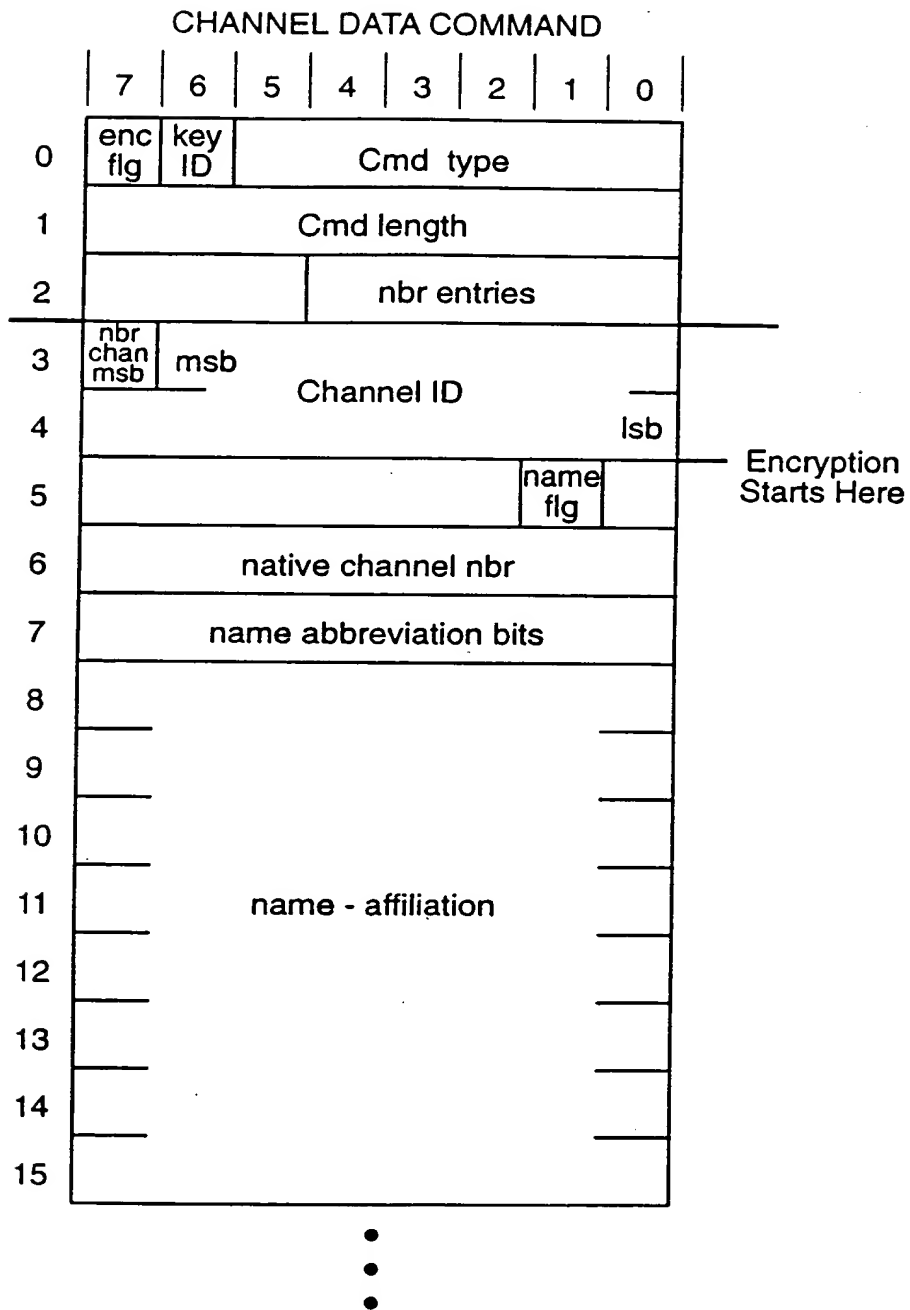
[illegible]

FIG. 9

**FIG._10****DAYLIGHT SAVING TIME CHANGE COMMAND****FIG._11**

REGION COMMAND

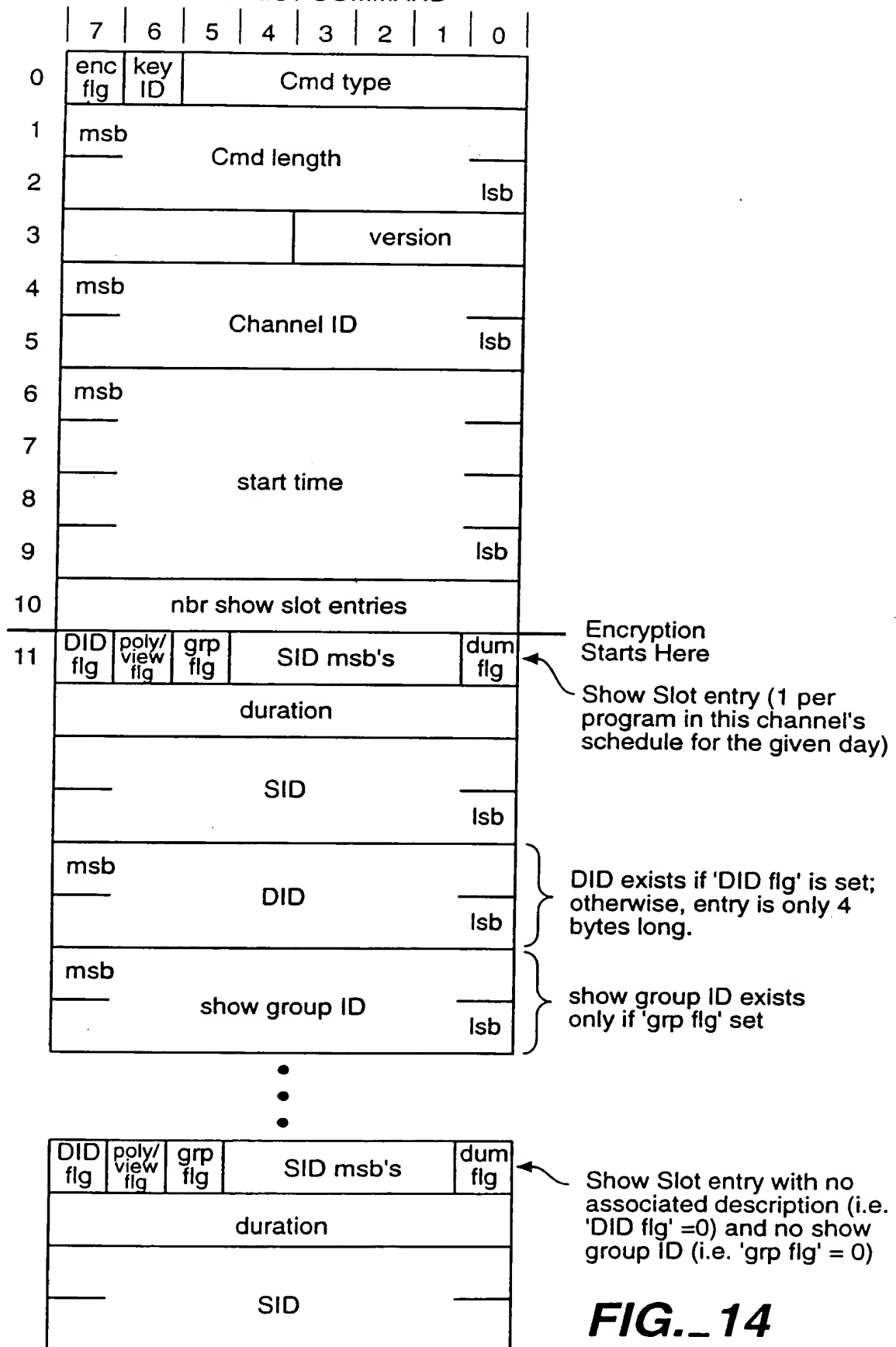
**FIG._12**

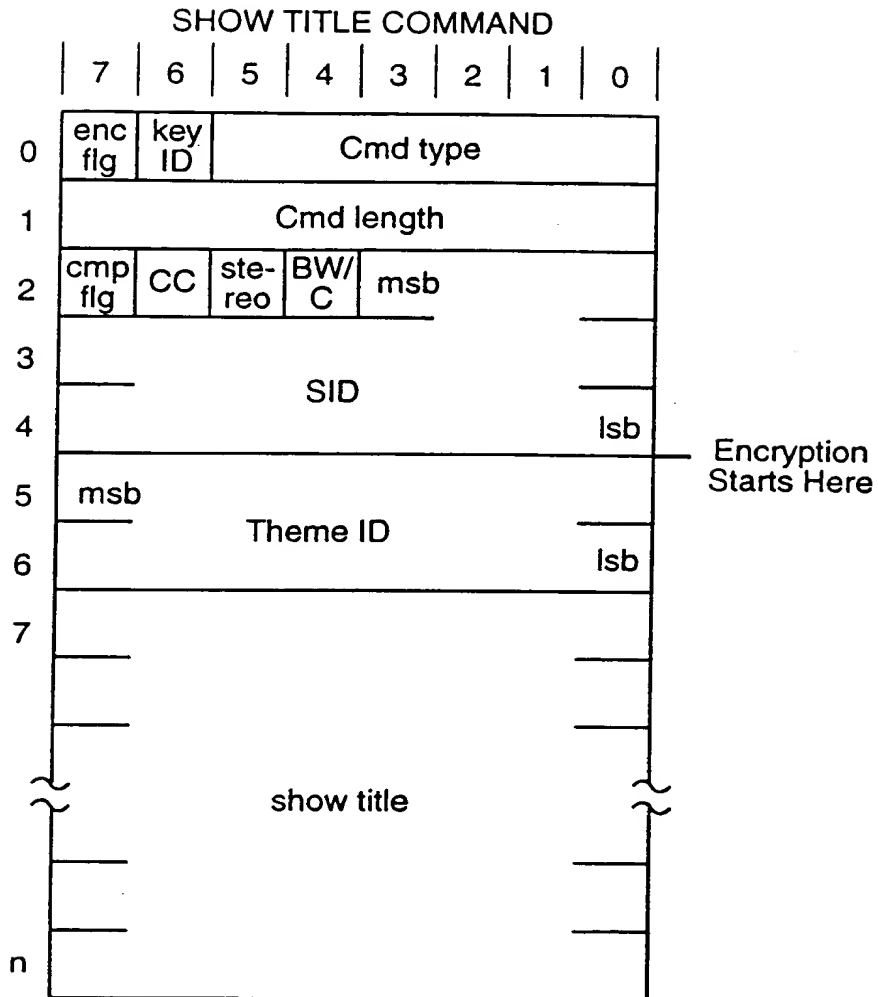


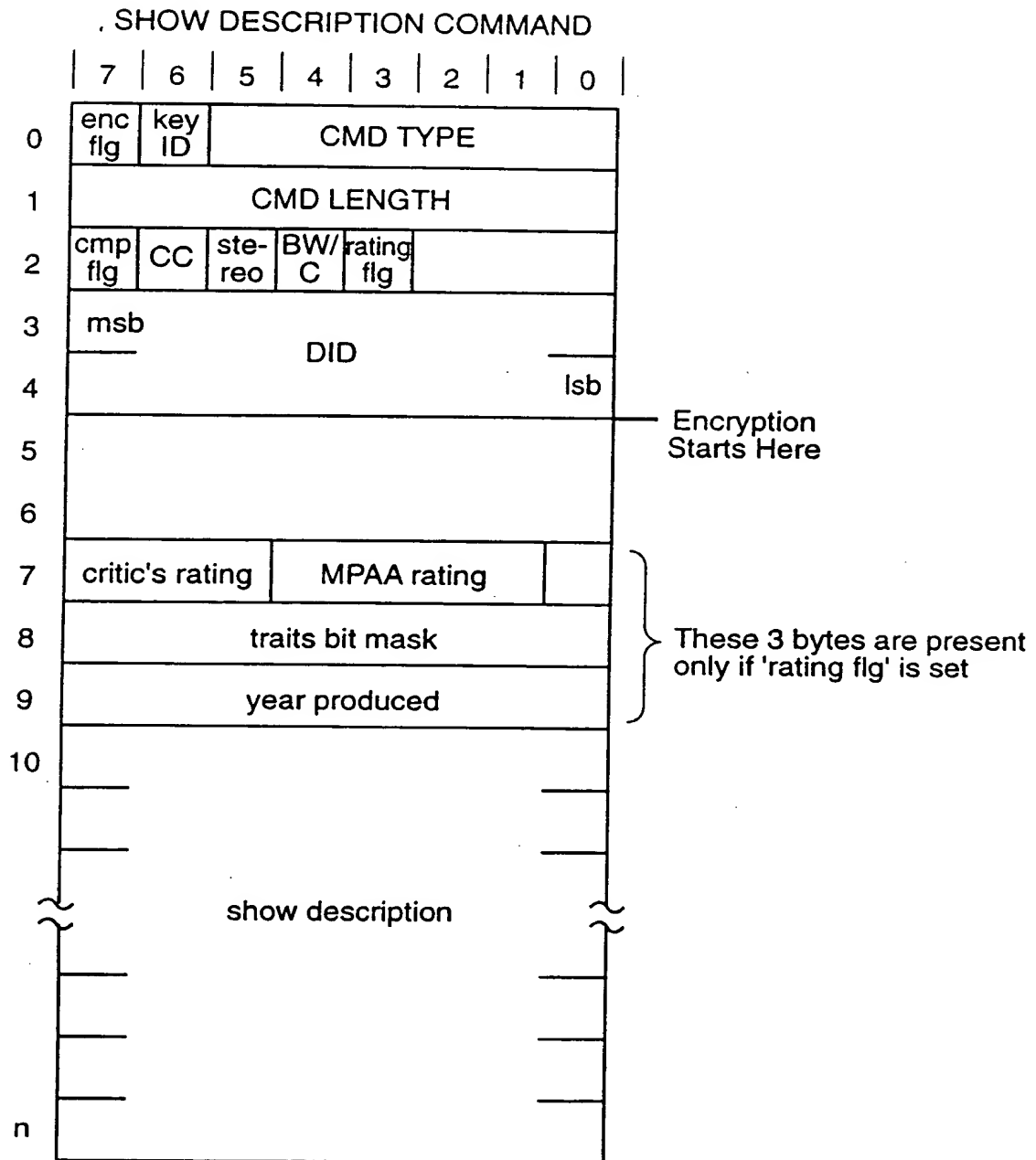
Encryption
Starts Here

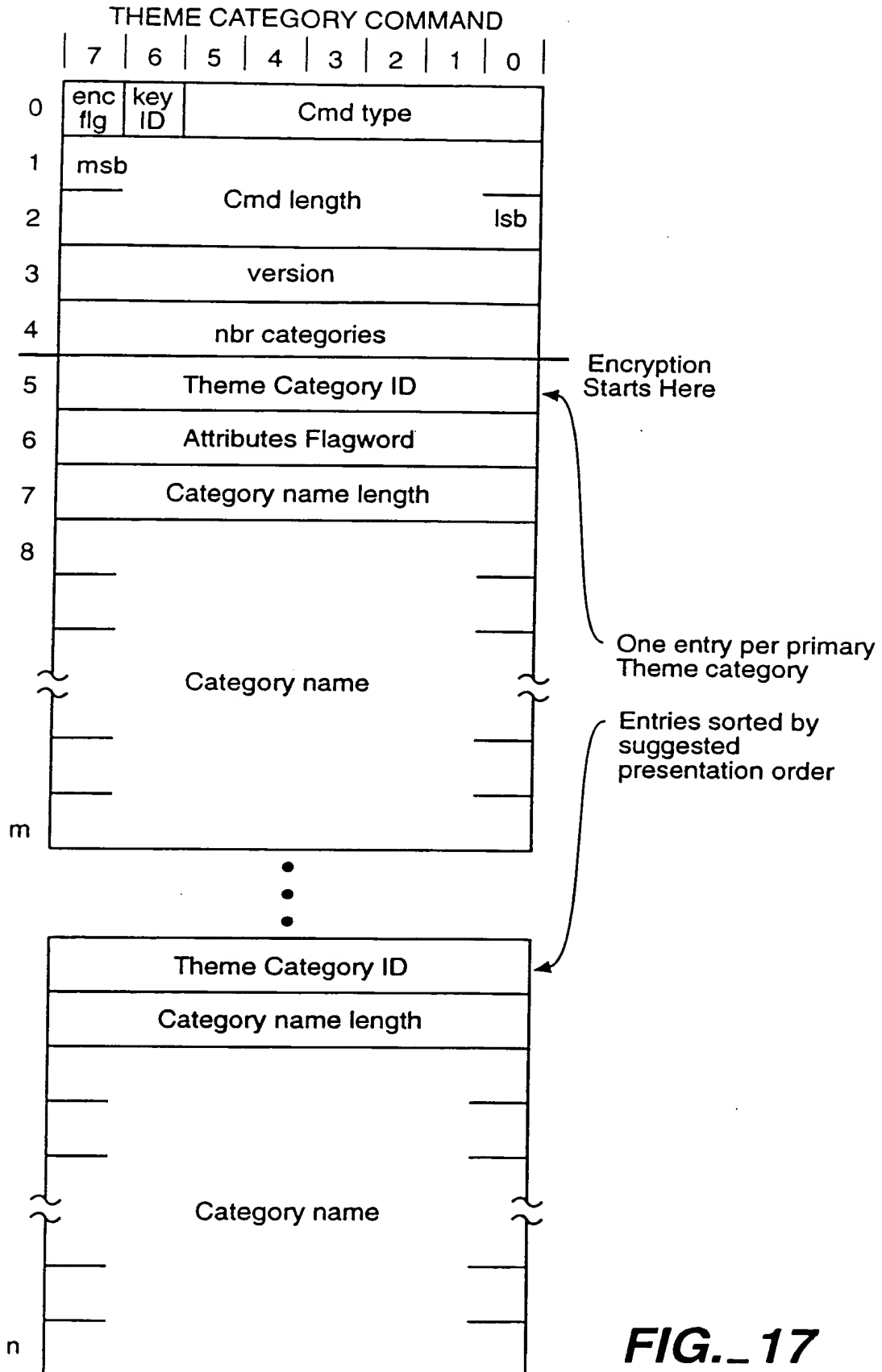
FIG. 13

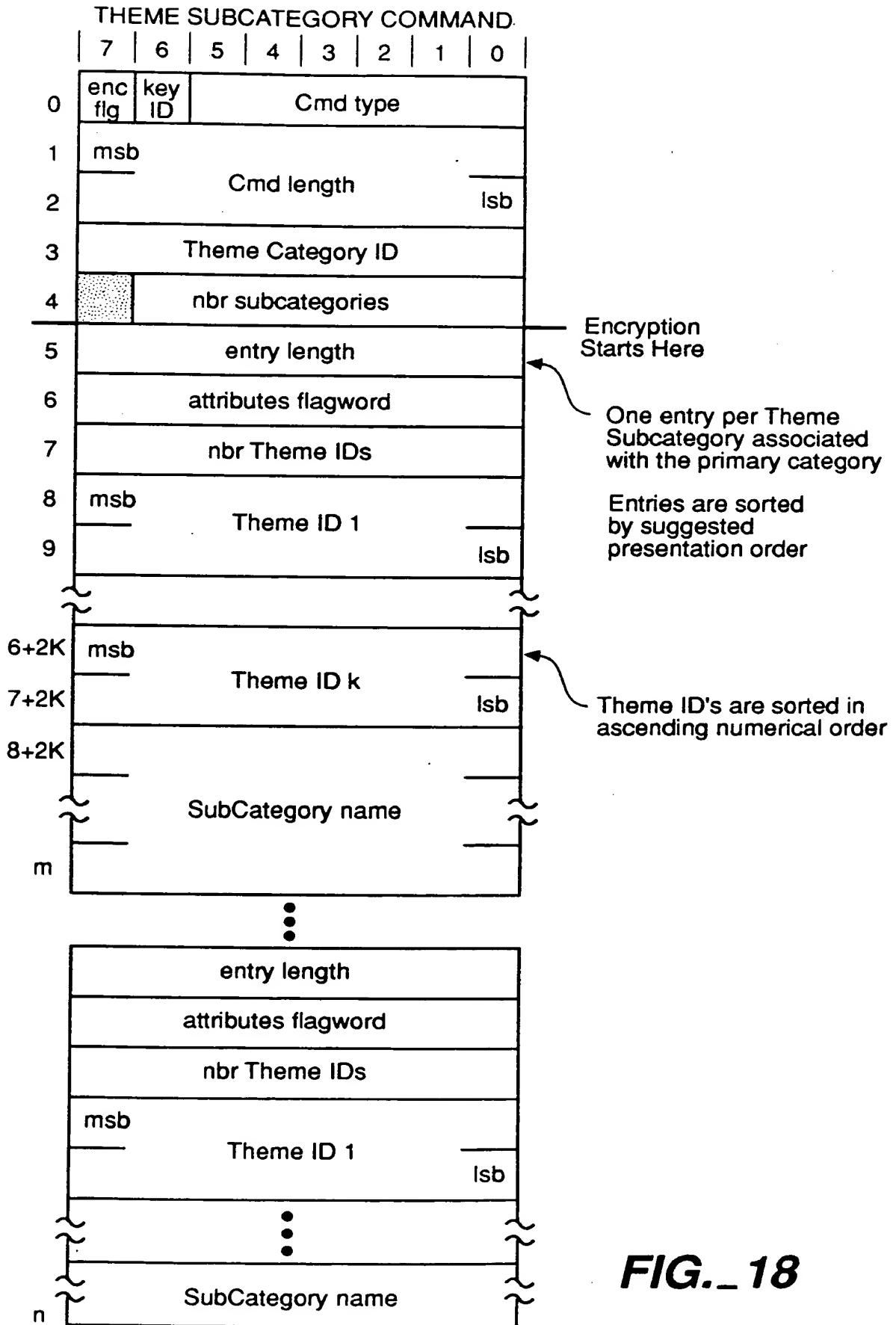
SHOWLIST COMMAND

**FIG._14**

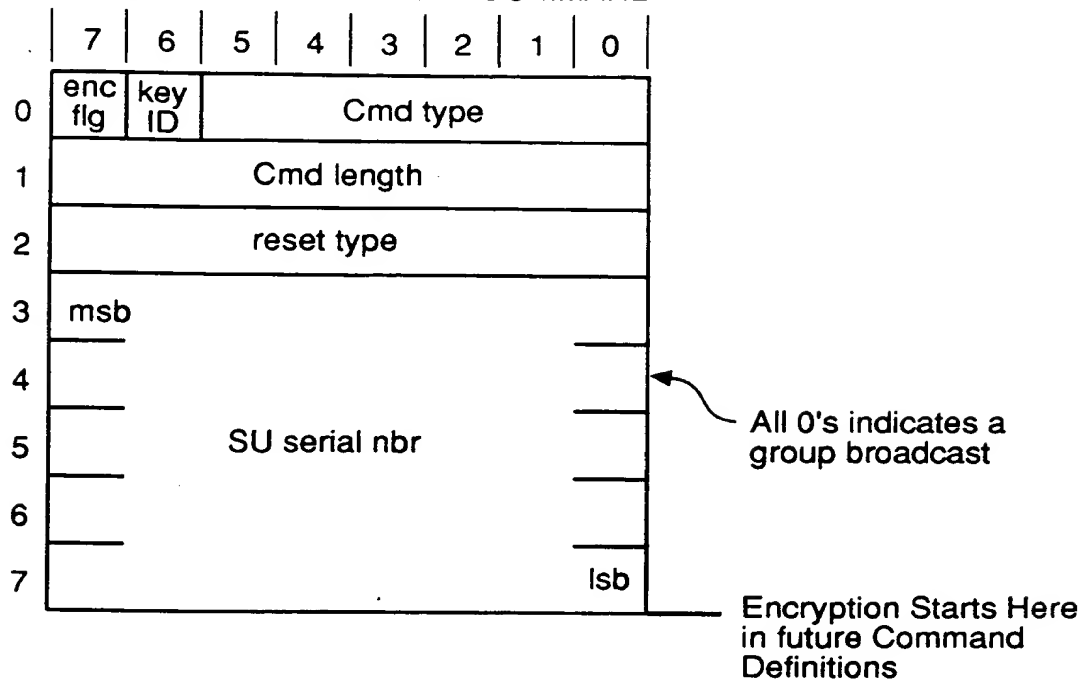
**FIG._15**

**FIG. 16**

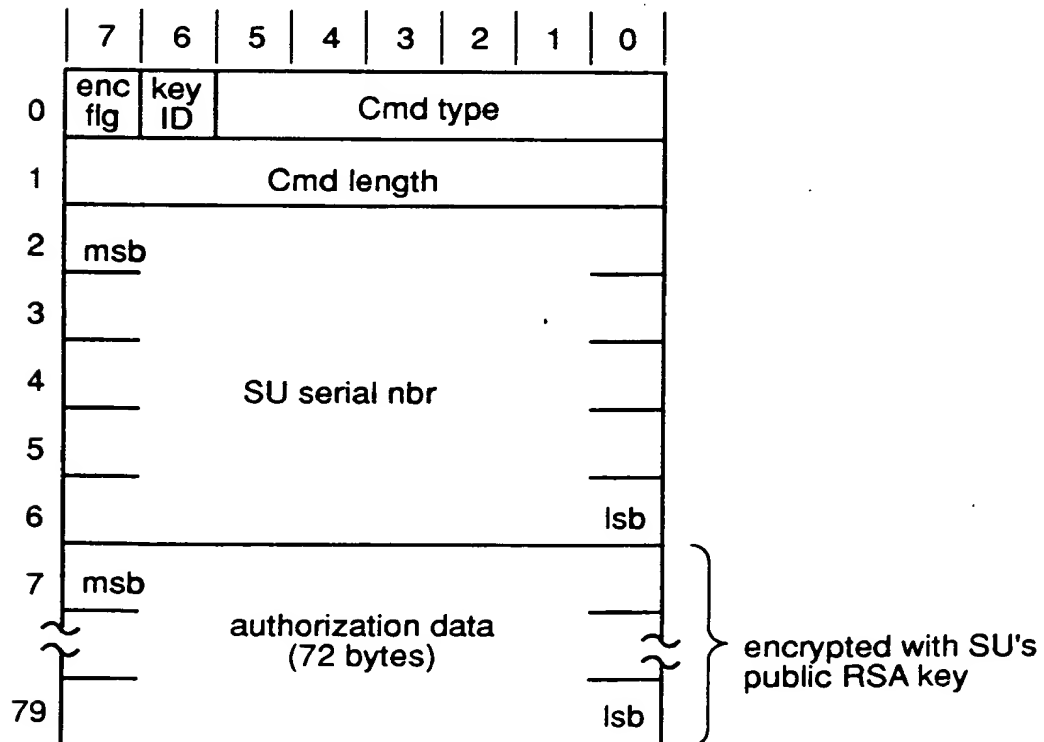
**FIG._17**



SUBSCRIBER UNIT RESET COMMAND

**FIG._19**

AUTHORIZATION COMMAND

**FIG._20**

AUTHORIZATION COMMAND 'AUTHORIZATION
FIELD'(NOT ENCRYPTED)

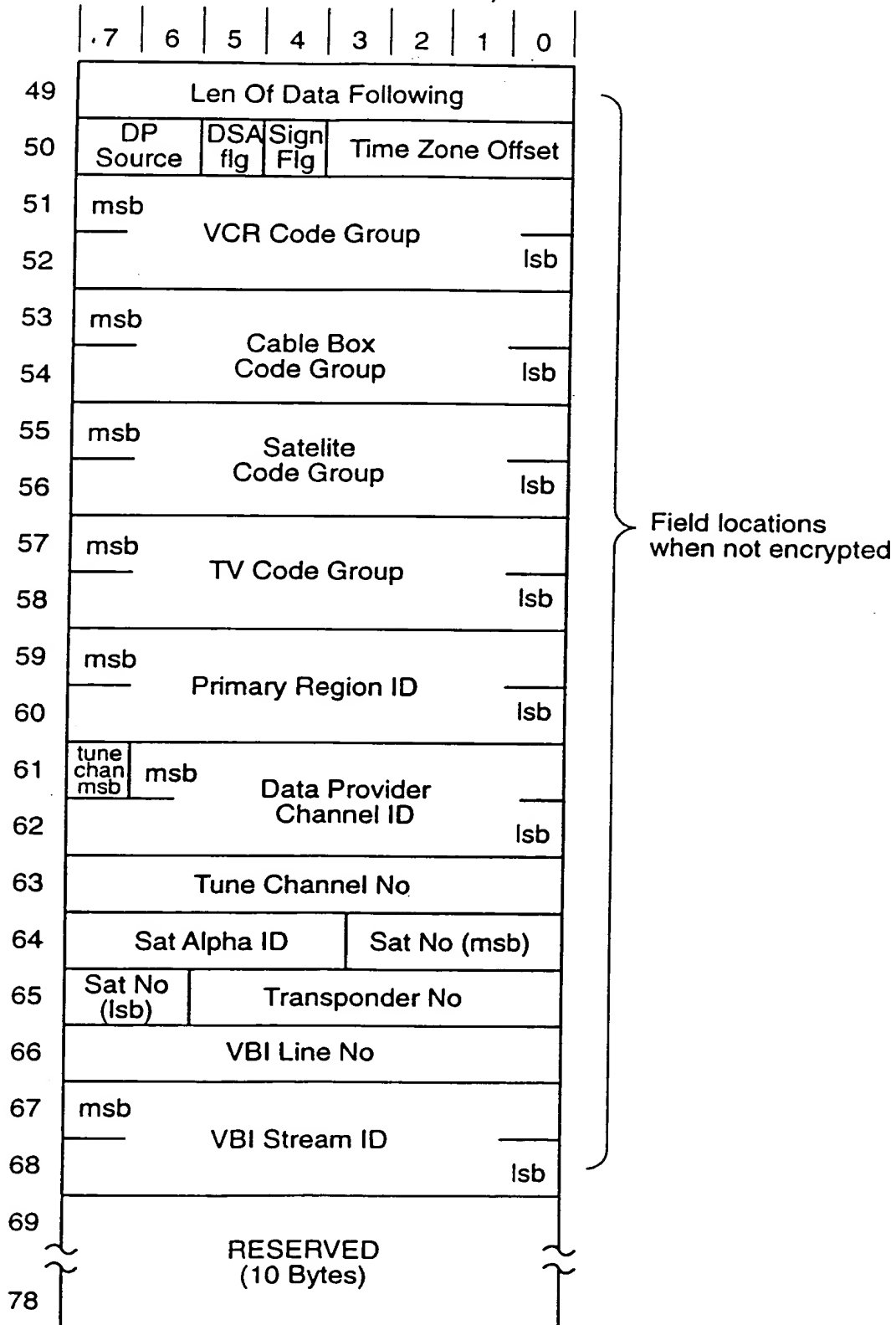


FIG._21

AUTHORIZATION COMMAND 'AUTHORIZATION
FIELD'(NOT ENCRYPTED)

	7	6	5	4	3	2	1	0
49	Len Of Data Following							
50	DP Source		DSA flg	Sign Flg	Time Zone Offset			
51	msb							
52	VCR Code Group							lsb
53	msb							
54	Cable Box Code Group							lsb
55	msb							
56	Satelite Code Group							lsb
57	msb							
58	TV Code Group							lsb
59	msb							
60	Primary Region ID							lsb
61	tune chan msb	msb						
62	Data Provider Channel ID							lsb
63	Tune Channel No							
64	Sat Alpha ID				Sat No (msb)			
65	Sat No (lsb)		Transponder No					
66	VBI Line No							
67	msb							
68	VBI Stream ID							lsb
69	RESERVED (10 Bytes)							
78								

Field locations
when not encrypted

FIG._22

LONG ASSIGN IR CODES

	7	6	5	4	3	2	1	0
0	enc flg	key ID	Cmd type					
1	Cmd length							
2								
3								
4								
5	Serial Number							
6								
7								
8								
9	Product Code							
10								
11	Interconnect Configuration							
12	Vendor Specific							
13	Device Type							
14	Device ID							
15								
16	Version							
17	IR Codes Length							
18								
⋮	IR Codes							
n								

Serial Number = 0
means command applies
to all units having a
matching Product Code,
Device Type, and Device
ID.

Interconnect Configuration =
0xFF means keep the user's
current interconnect
configuration.

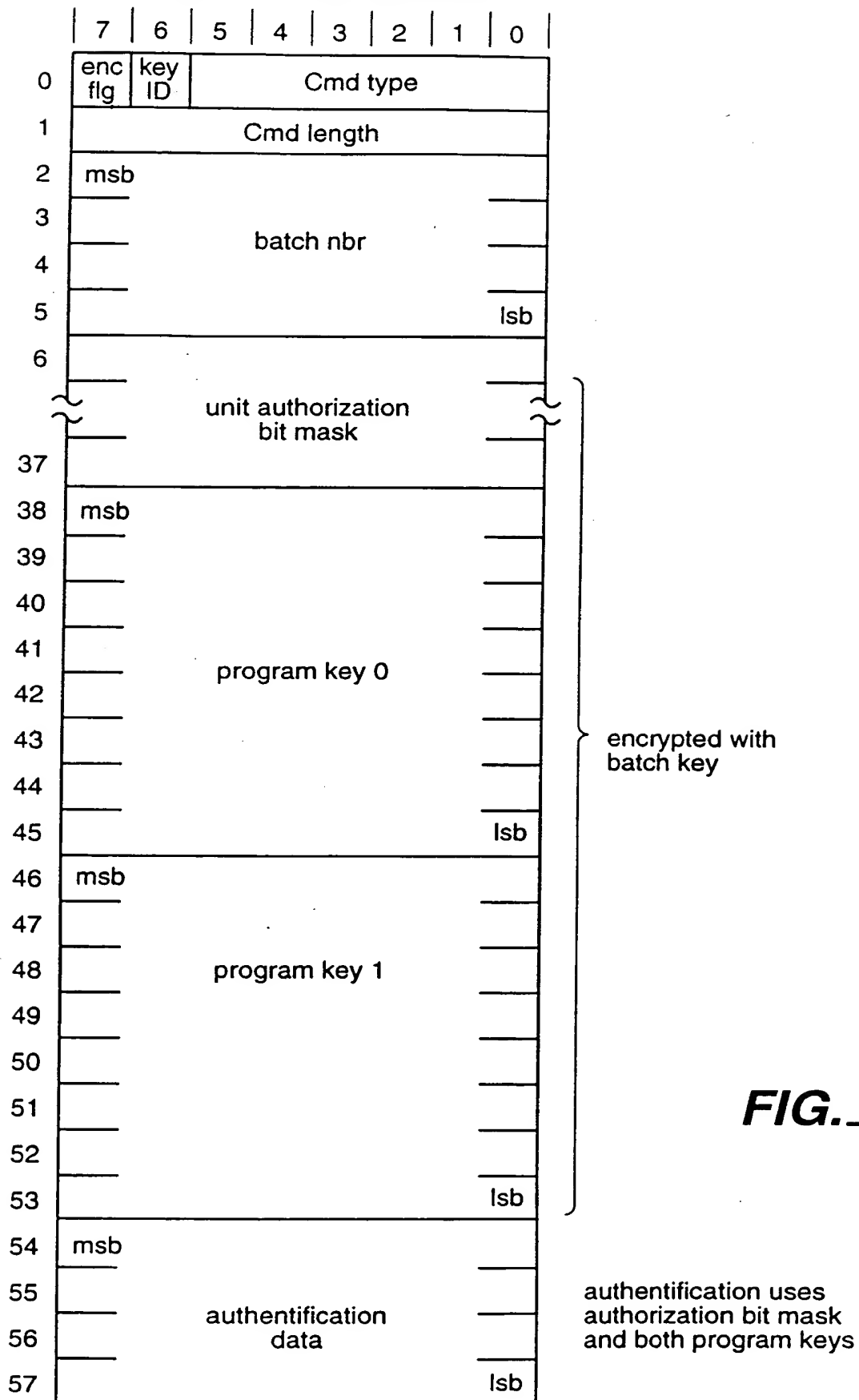
Vendor Specific field value
depends on the Product
Code. E.g. for Zenith TVs
this is the Tune Method.

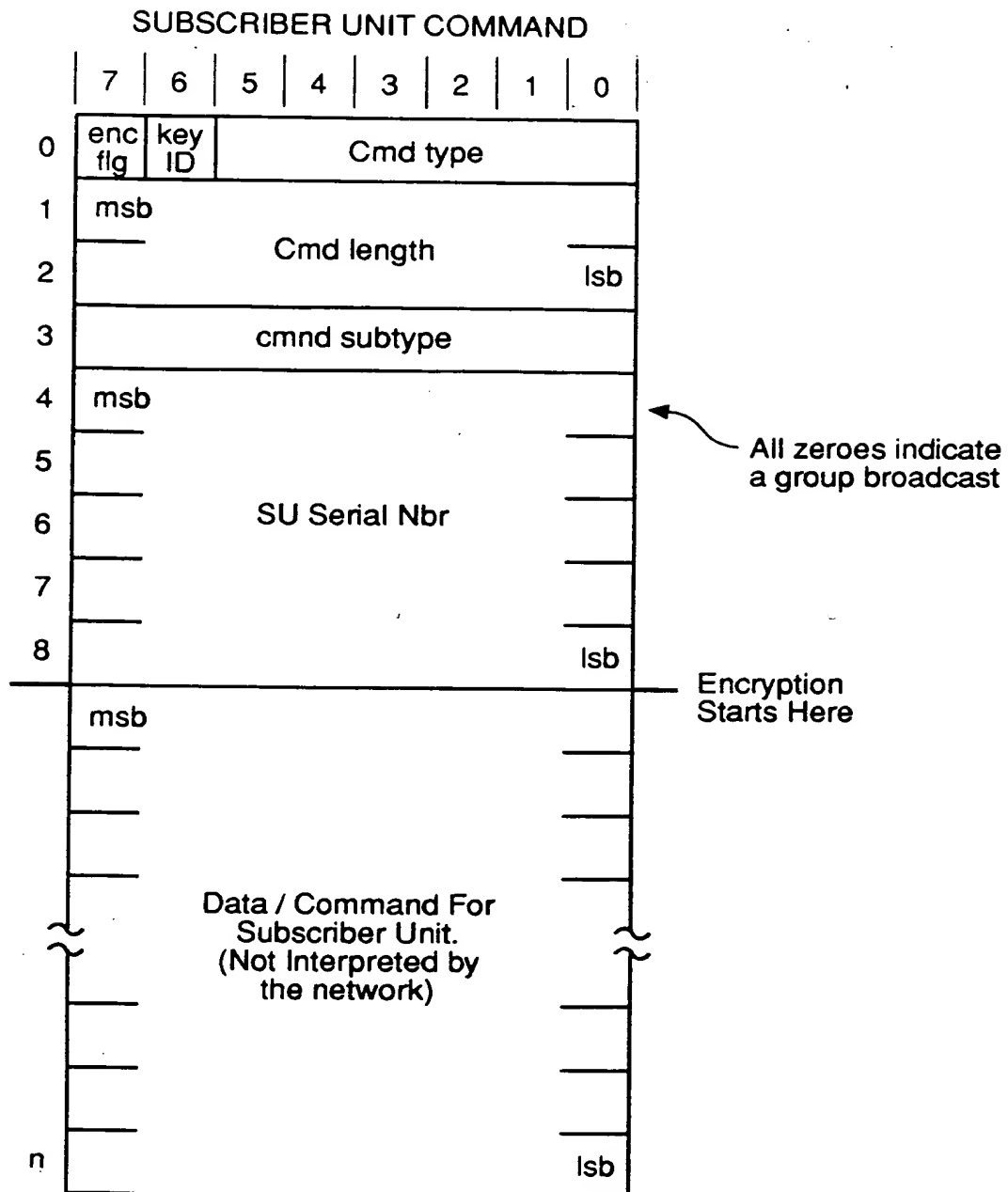
IR Codes Length = 0 means set
the appropriate code group and
system interconnect
configuration values only. i.e.
don't download IR codes to the
URC chip.

Structure within the IR Codes
field is determined by the
Universal Remote Control chip
vendor.

FIG. 23

KEY DISTRIBUTION COMMAND

**FIG. 24**

**FIG. 25**

DATABASE MEMORY POOL ACCESS SCHEME

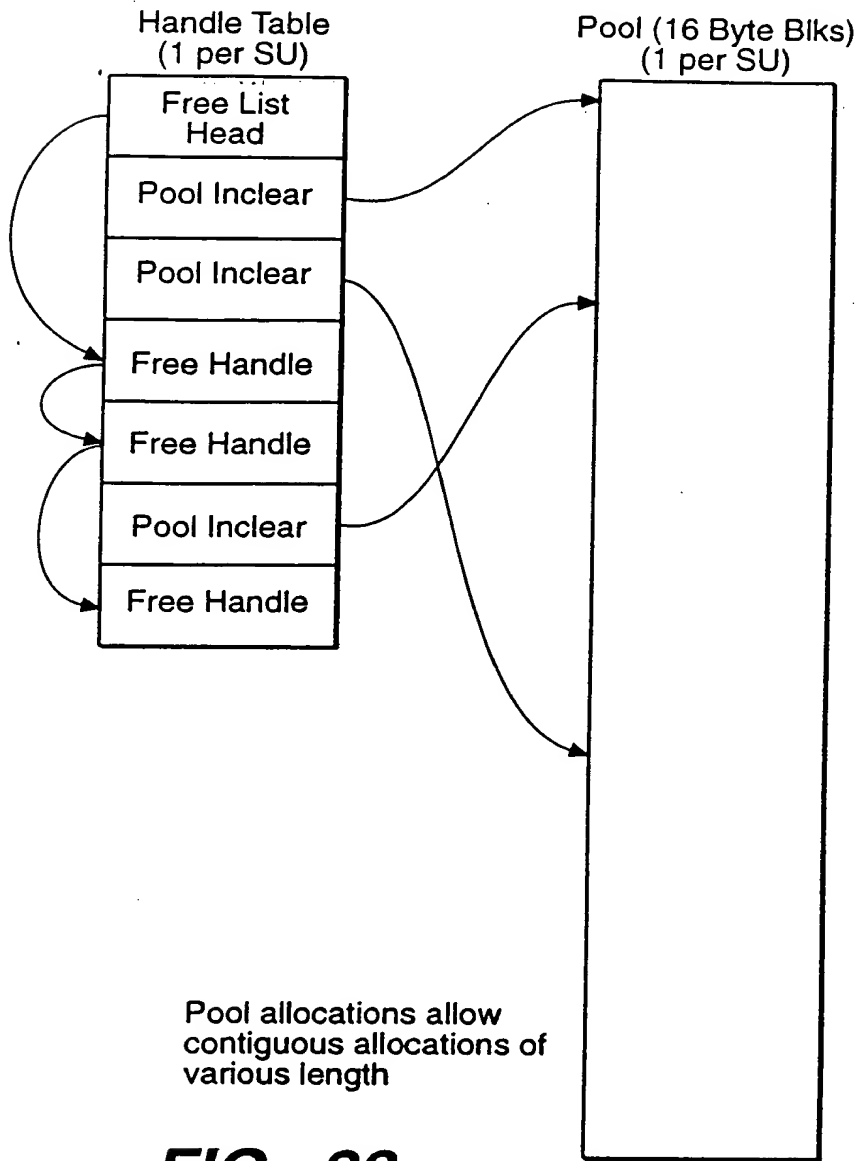


FIG._26

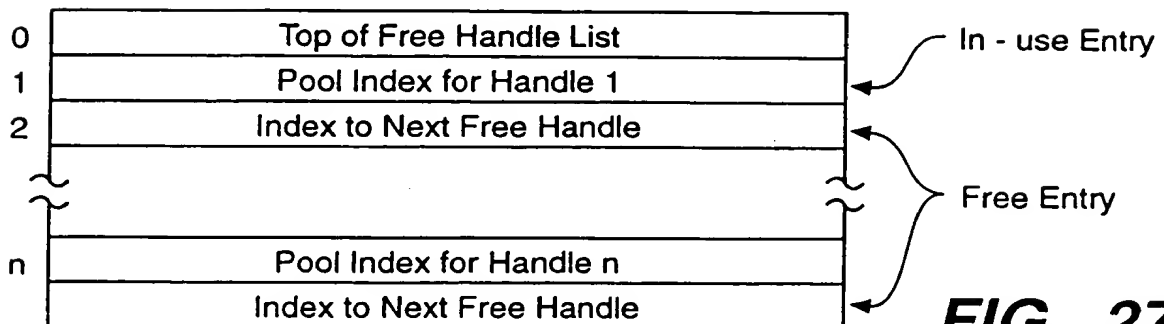


FIG._27

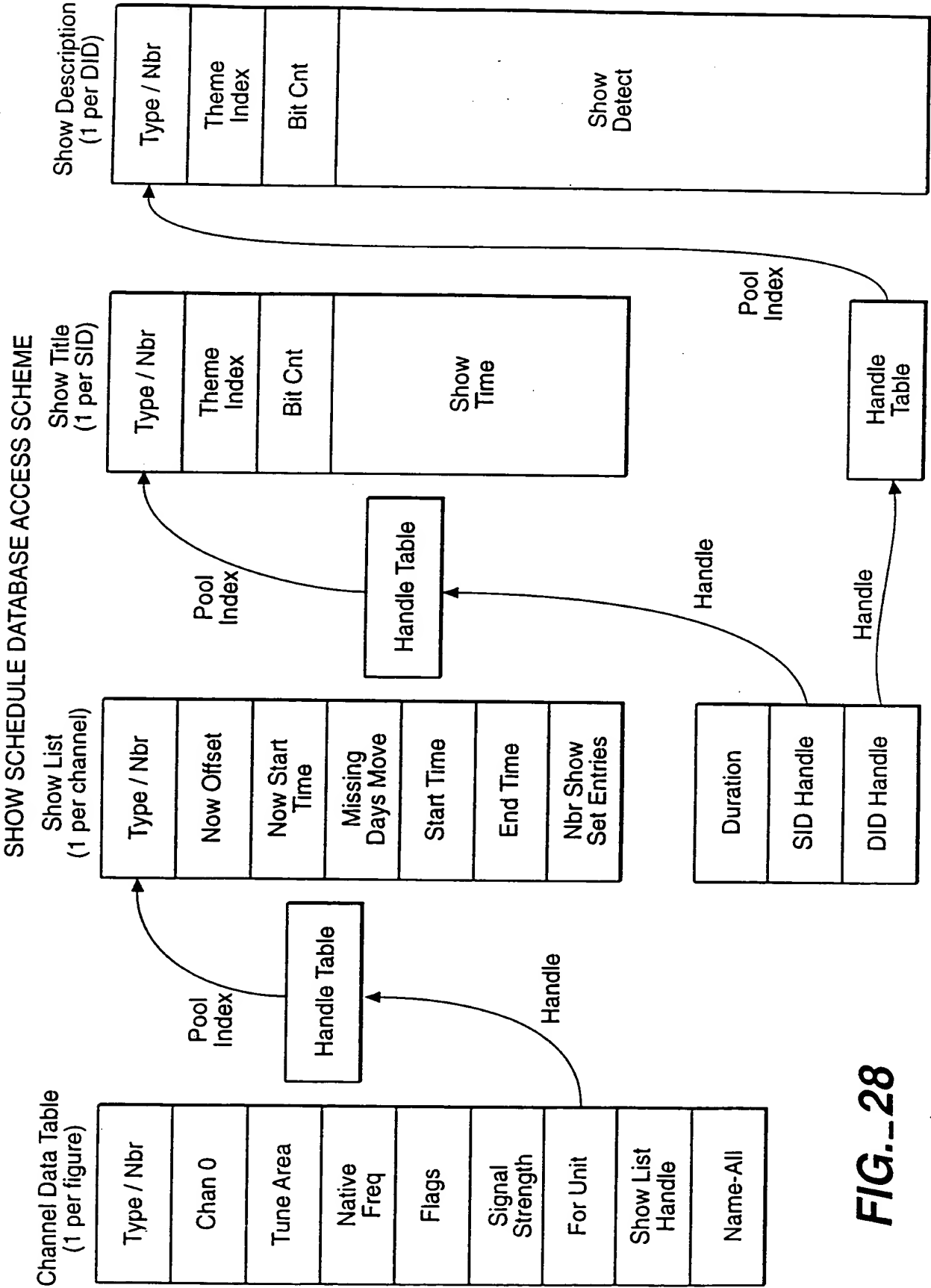
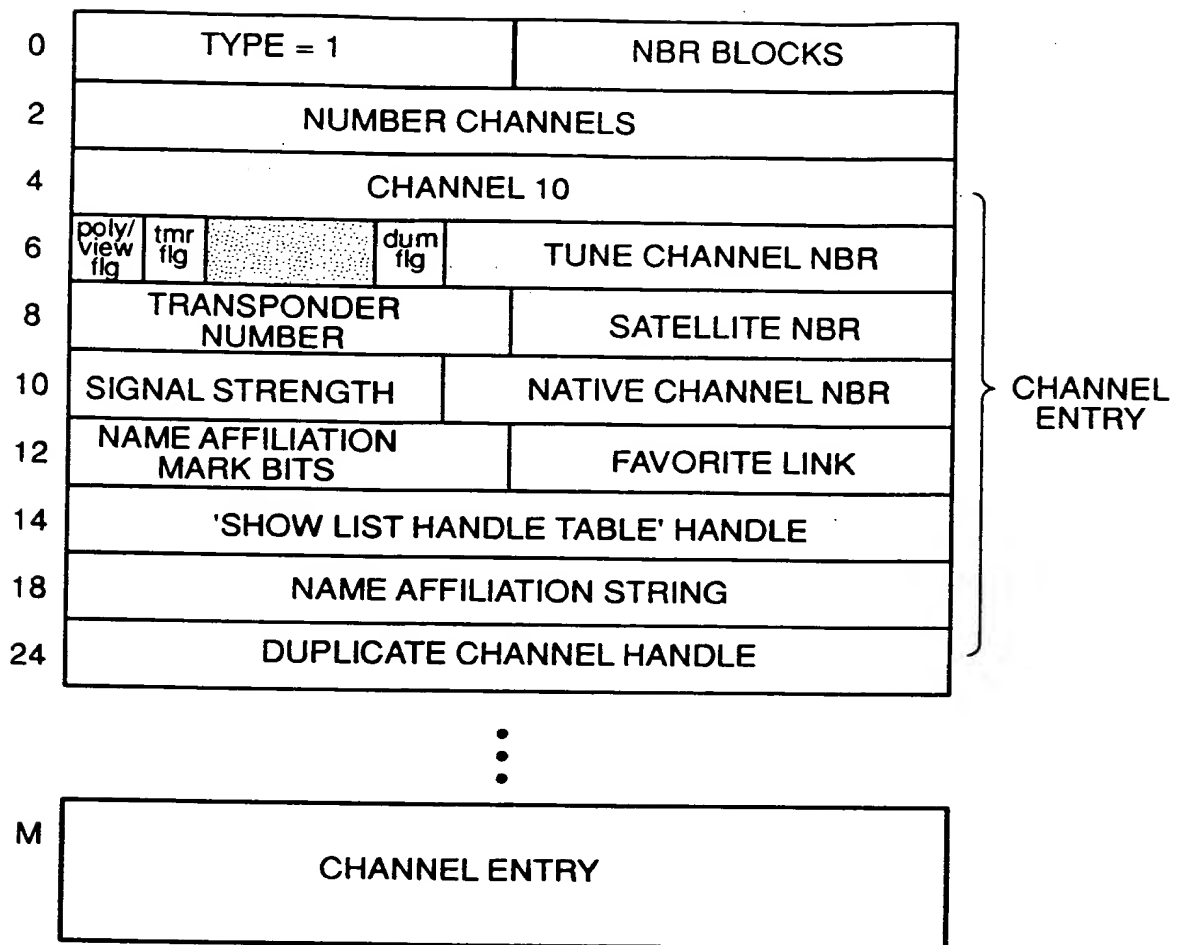
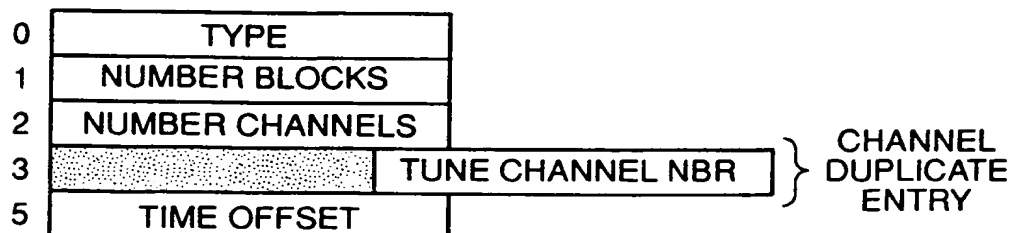


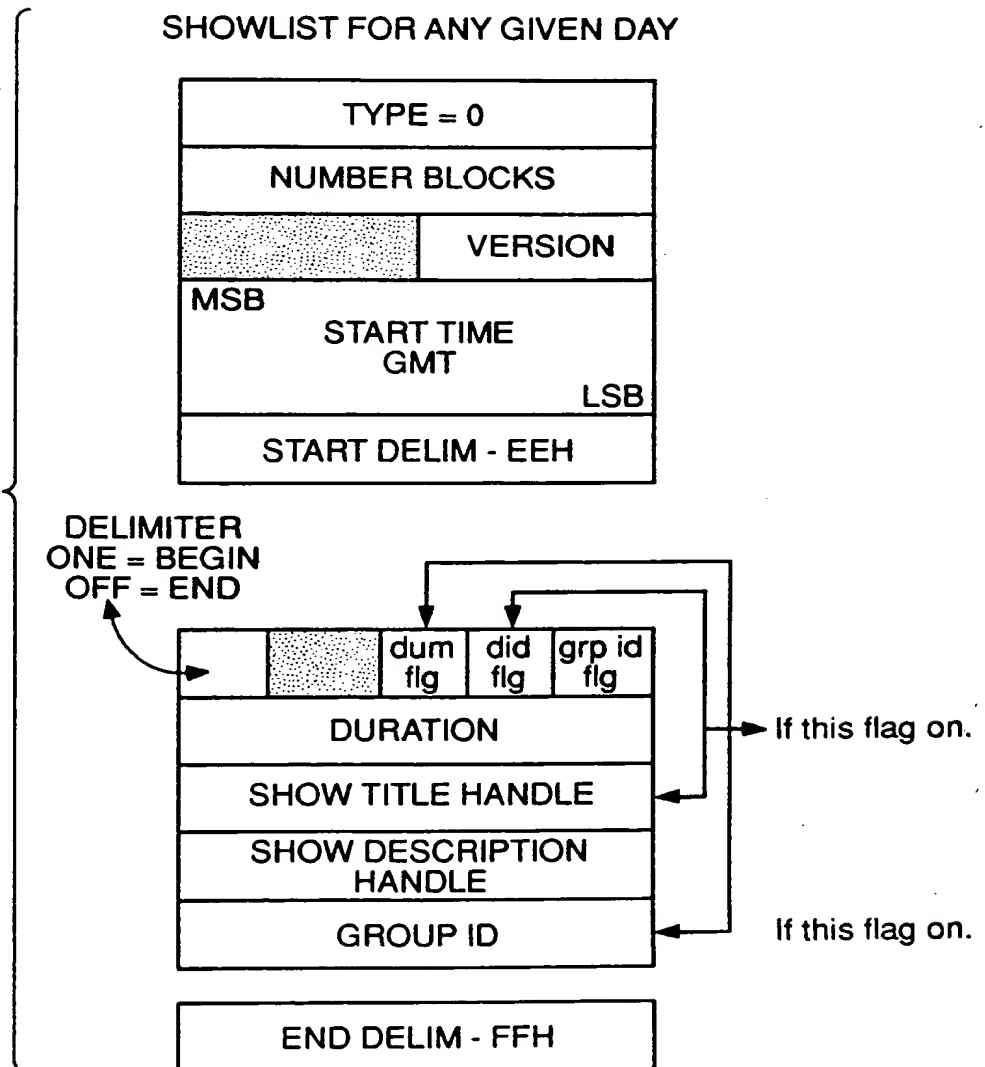
FIG._28

**FIG._29**

CHANNEL DUPLICATES TABLE

**FIG._30**

TYPE / NBR BLOCKS
REFERENCE COUNT
MONDAY SHOW LIST HANDLE
TUESDAY SHOW LIST HANDLE
WEDNESDAY SHOW LIST HANDLE
THURSDAY SHOW LIST HANDLE
FRIDAY SHOW LIST HANDLE
SATURDAY SHOW LIST HANDLE
SUNDAY SHOW LIST HANDLE

FIG._31**FIG._32**

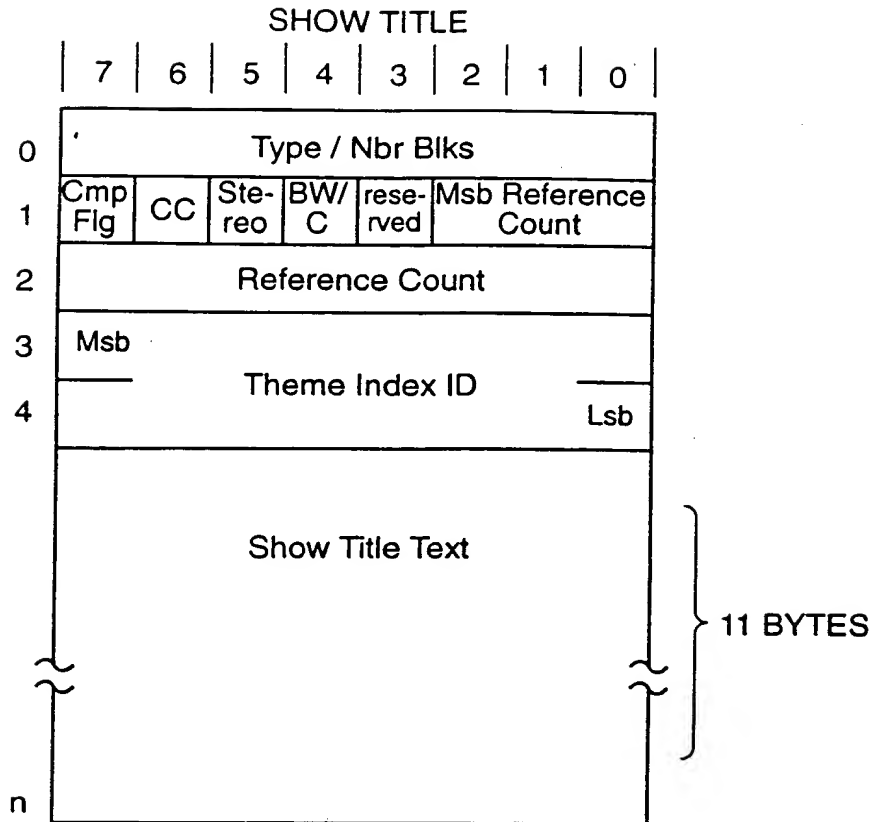


FIG..33

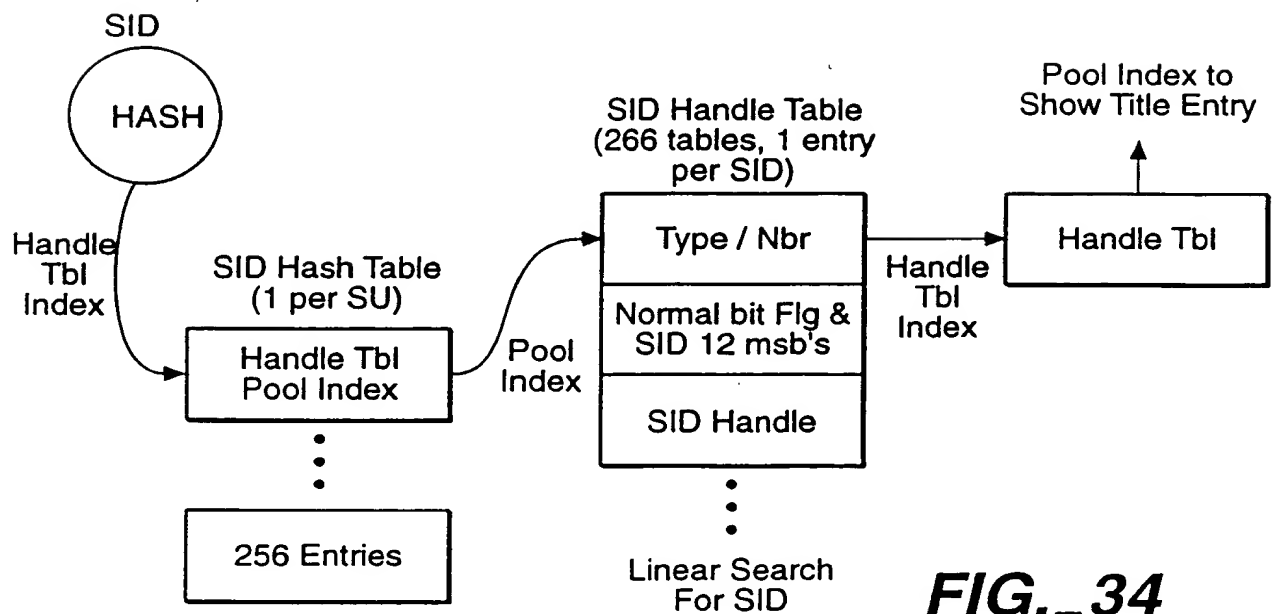


FIG..34

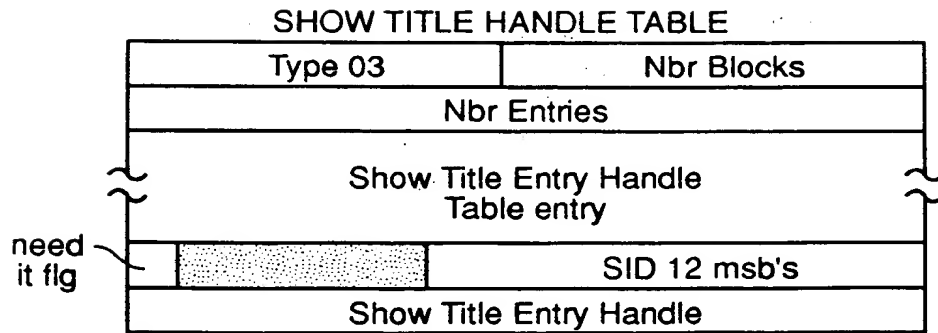


FIG._35

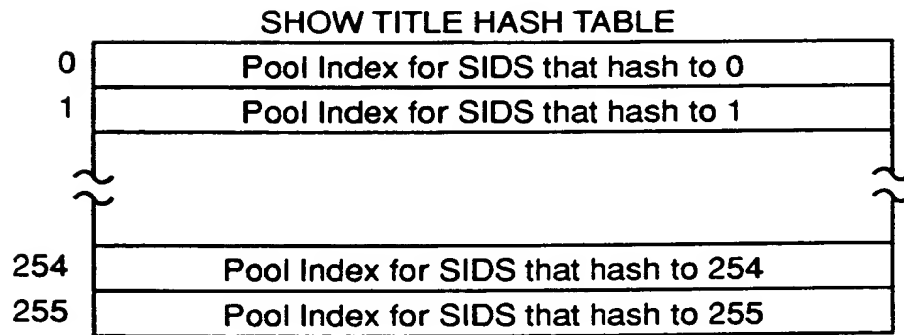
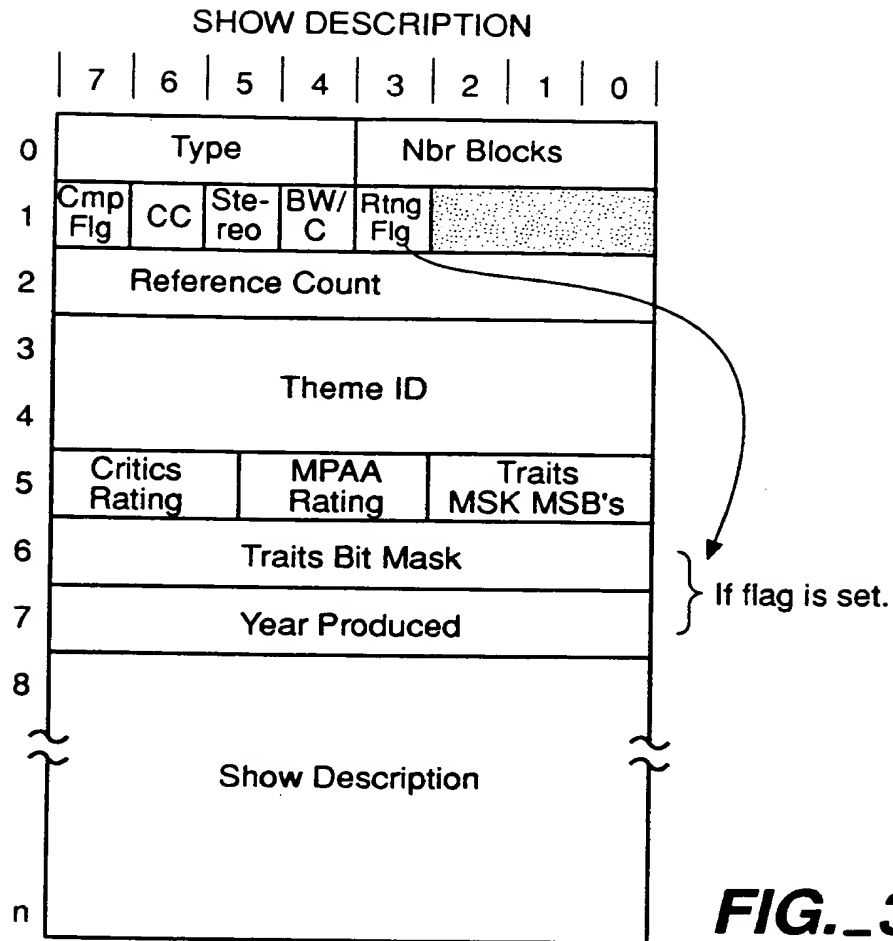
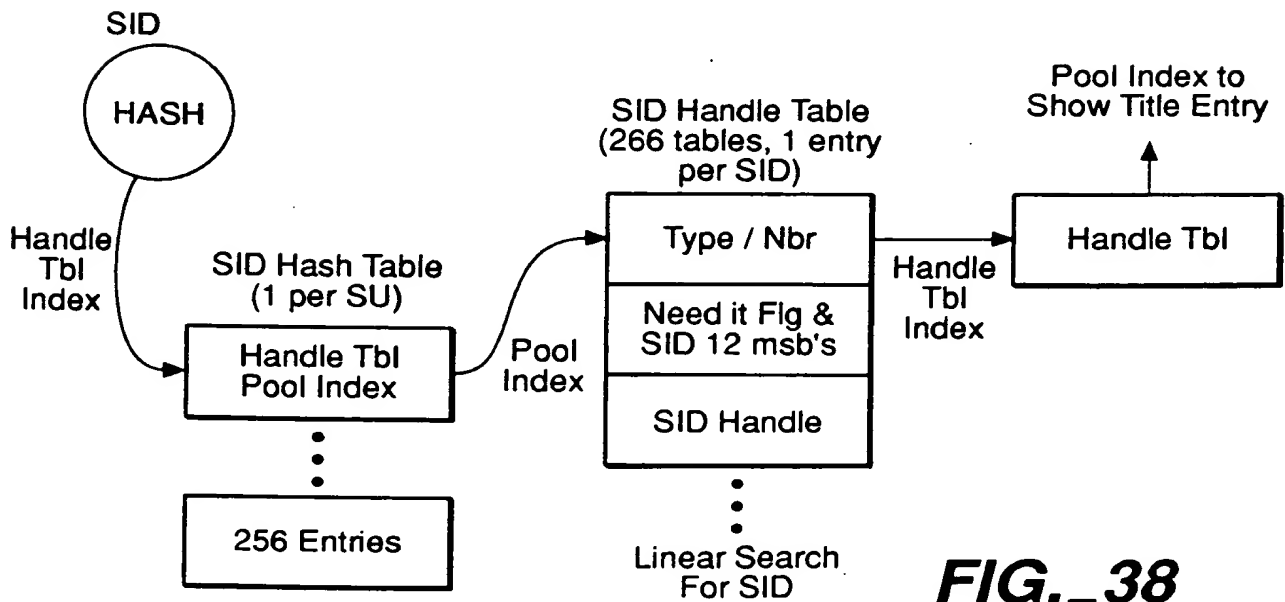
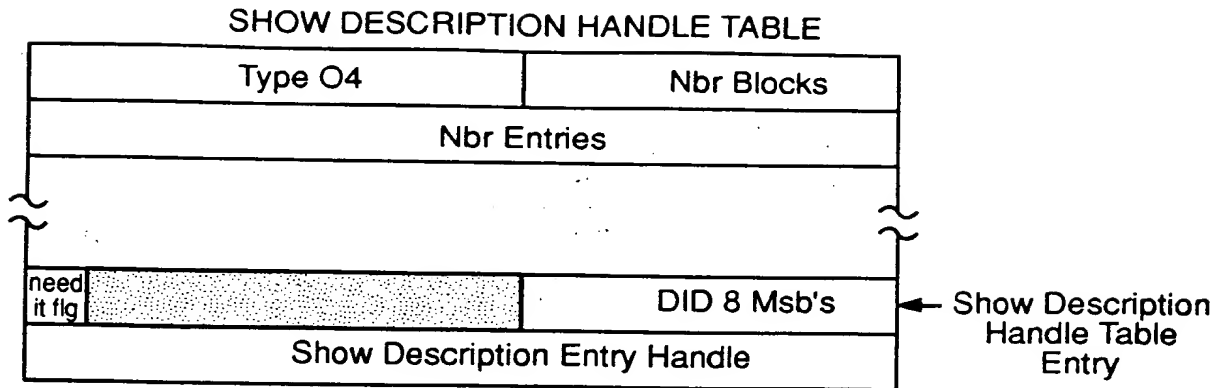
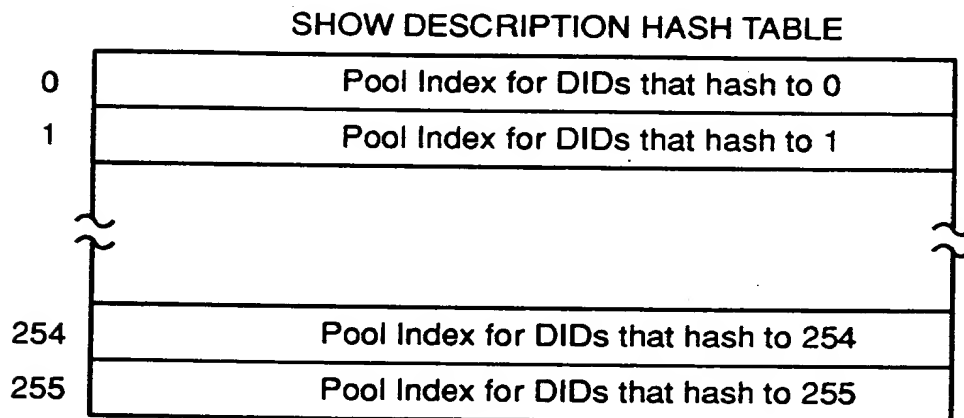
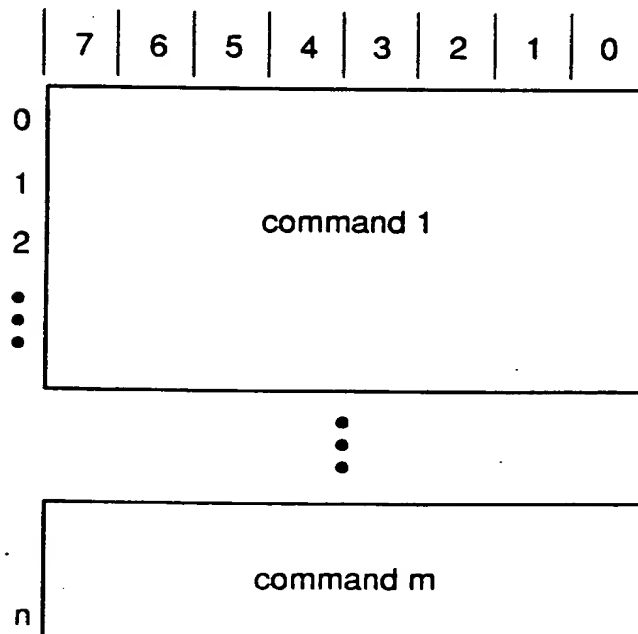


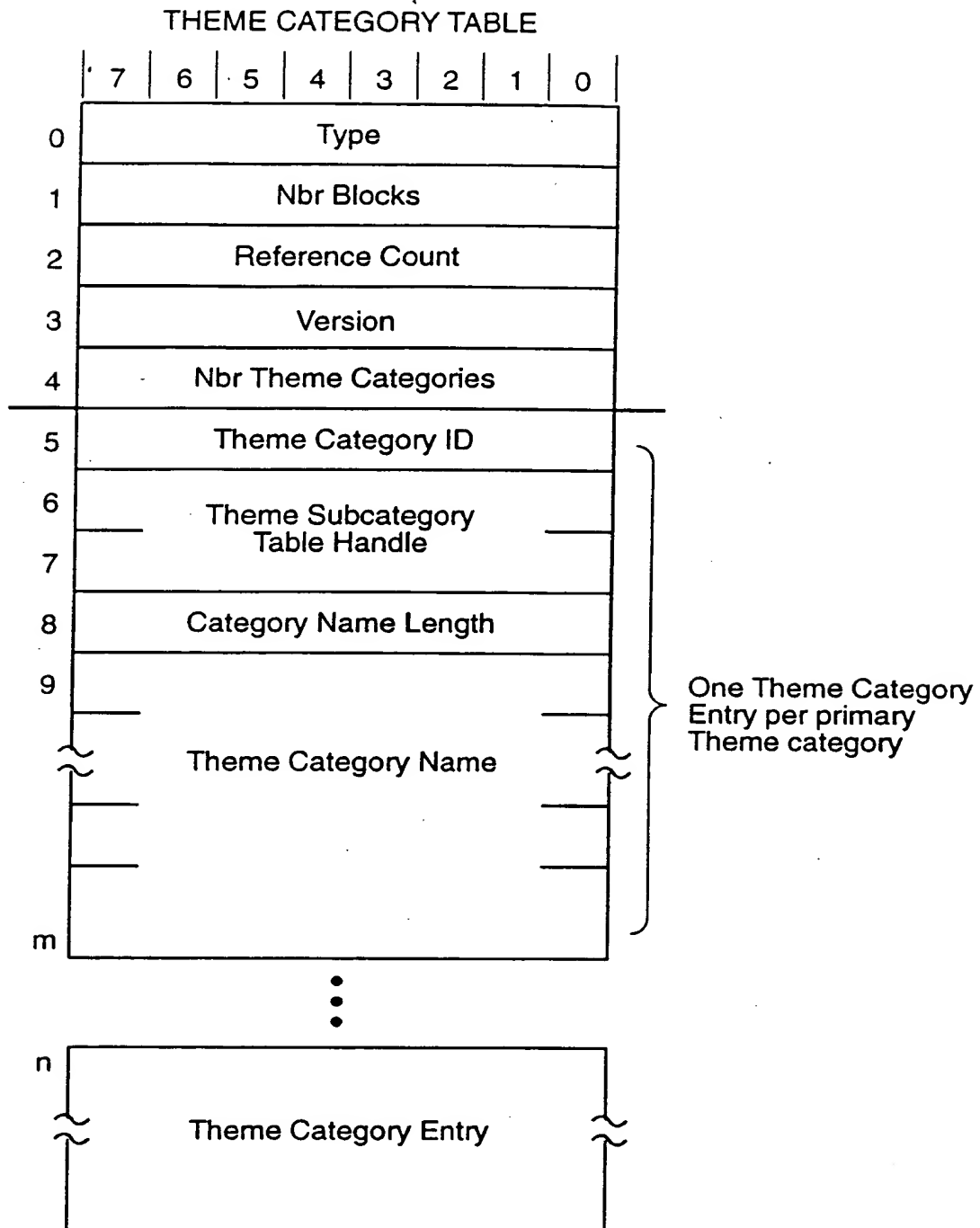
FIG._36

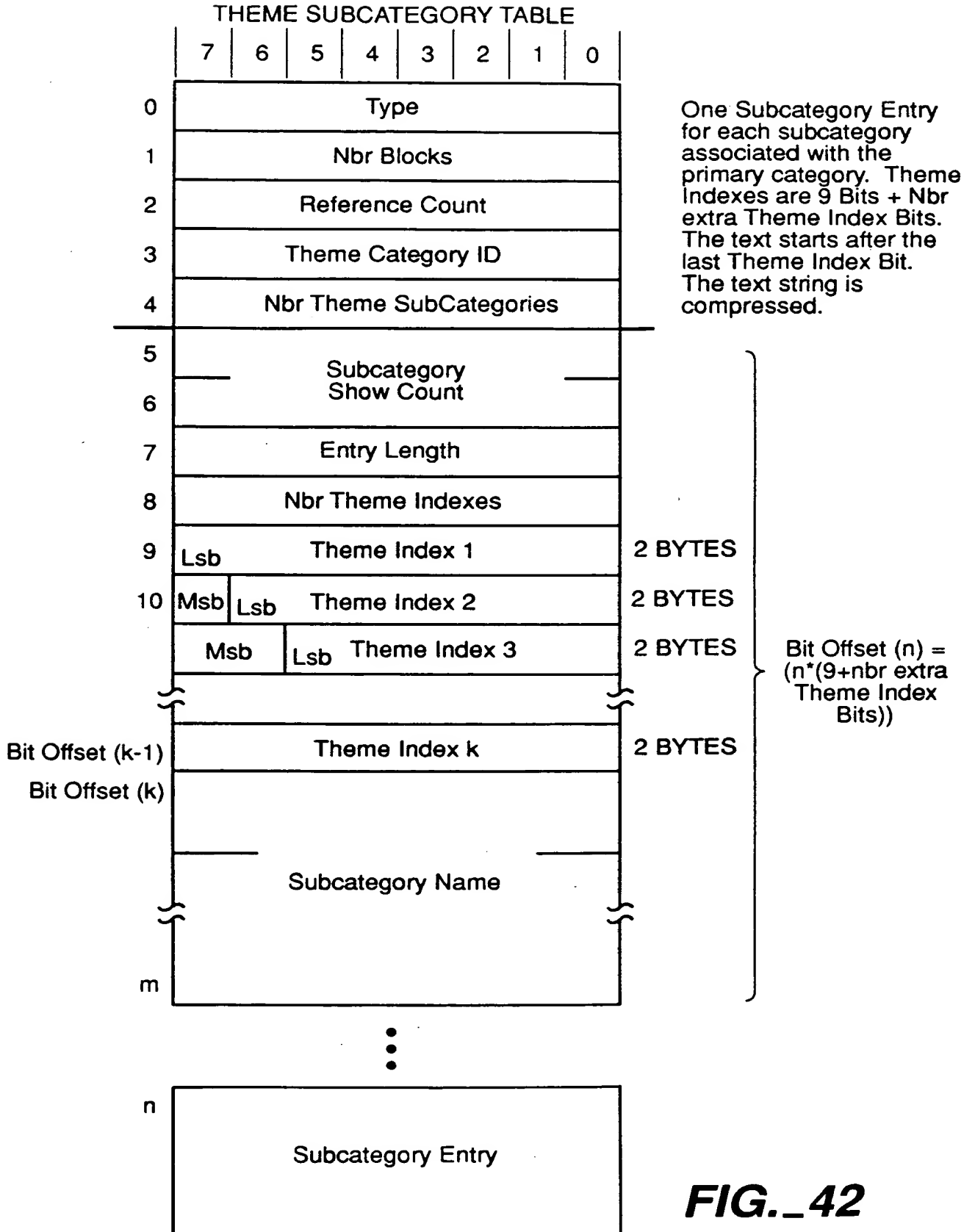
**FIG._37****FIG._38**

**FIG._39****FIG._40****I / O PROCESSOR COMMAND PACKET**

Packet lengths will never
exceed 512 bytes.

FIG._43

**FIG..41**



DRAW RECTANGLE

	7	6	5	4	3	2	1	0
0			Cmd type					
1	shadow width				shadow height			
2	shadow color 1				shadow color 2			
3	small font delta X				small font delta Y			
4	large font delta X							
5	large font delta Y							
6	highlight 1				highlight 2			
7	underline 11				underline 12			
8	underline 21				underline 22			

FIG._44

ERASE SCREEN

	7	6	5	4	3	2	1	0
0			Cmd type					
1			xpar color					

FIG._45

DRAW RECTANGLE

	7	6	5	4	3	2	1	0
0			Cmd type					
1	upper left X							
2	upper left Y							
3	width							
4	height							
5	fill color 1				fill color 2			
6	outline color 1				outline color 2			
7	fill	out-line	sha-dow	em-boss				

FIG._46

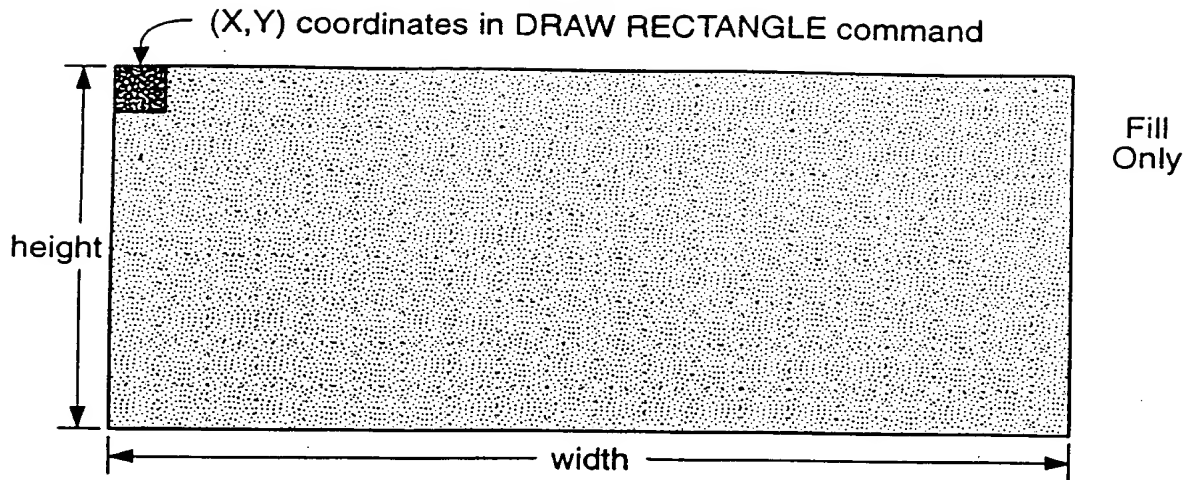


FIG._47A

Fill and Outline
(outline is one pixel high / wide)

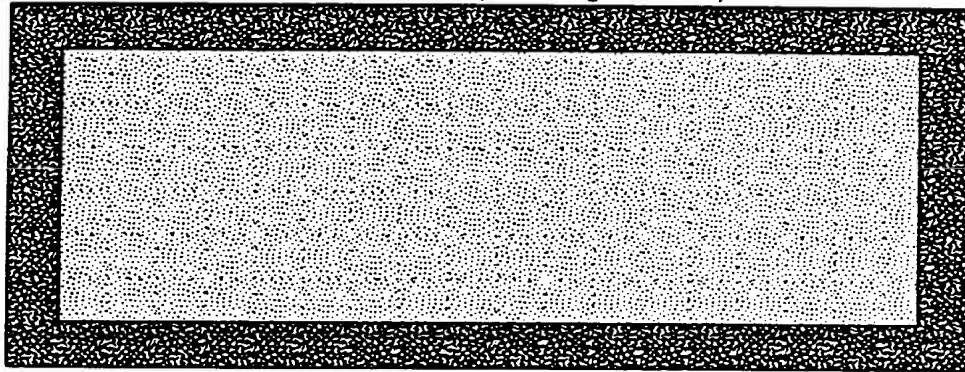


FIG._47B

(highlight and undrlines are one pixel high / wide)

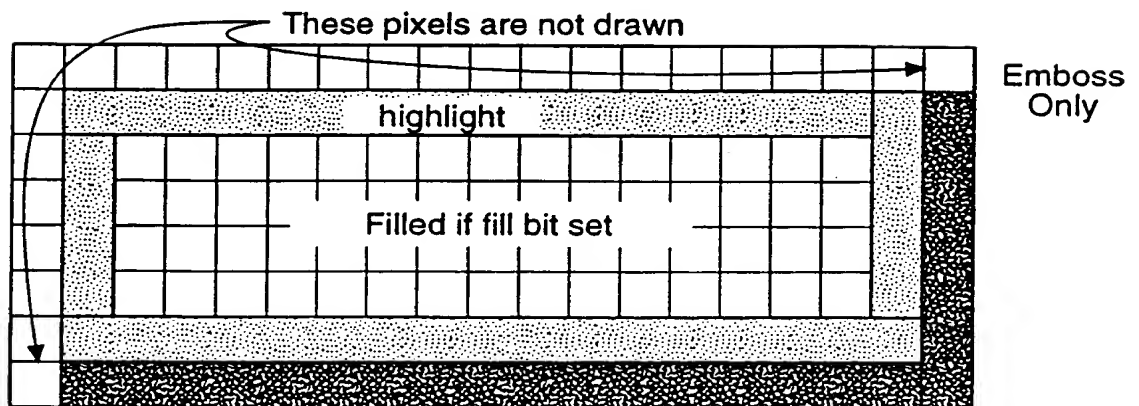


FIG._47C

Outline, Fill, and Emboss

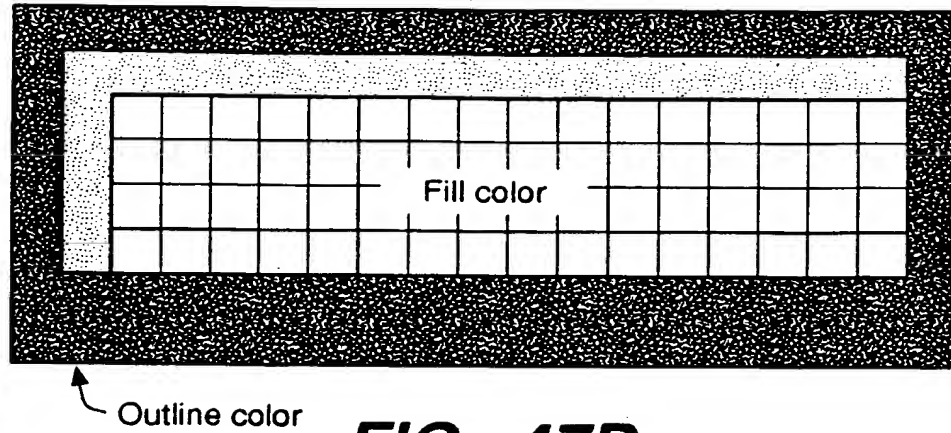


FIG._47D

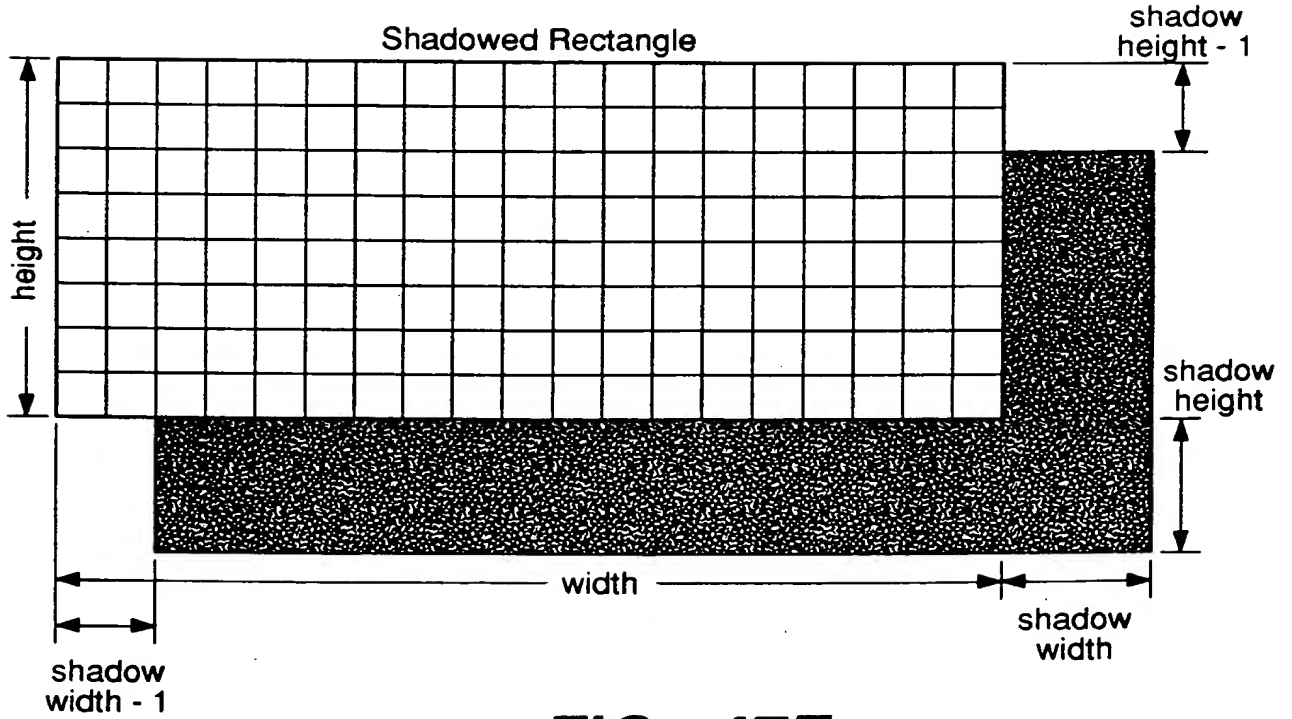
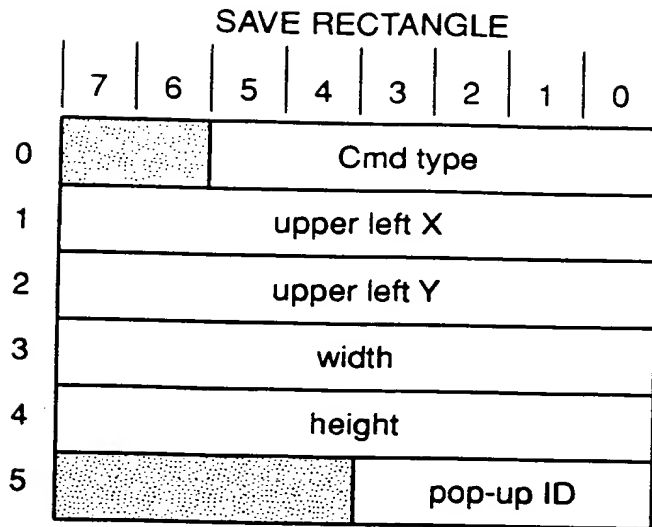
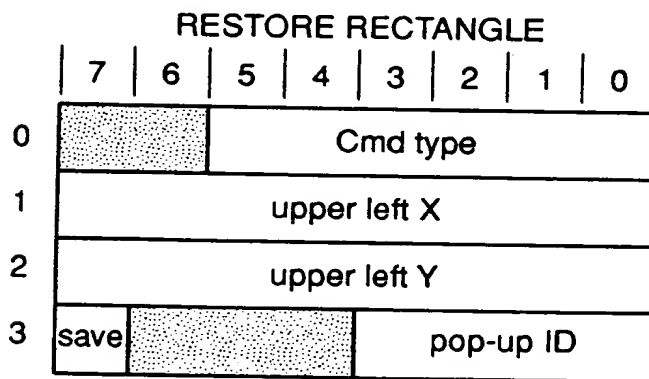
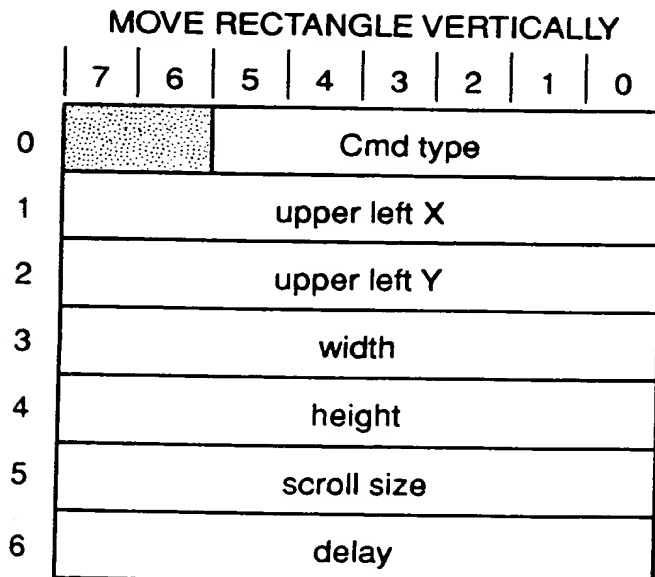
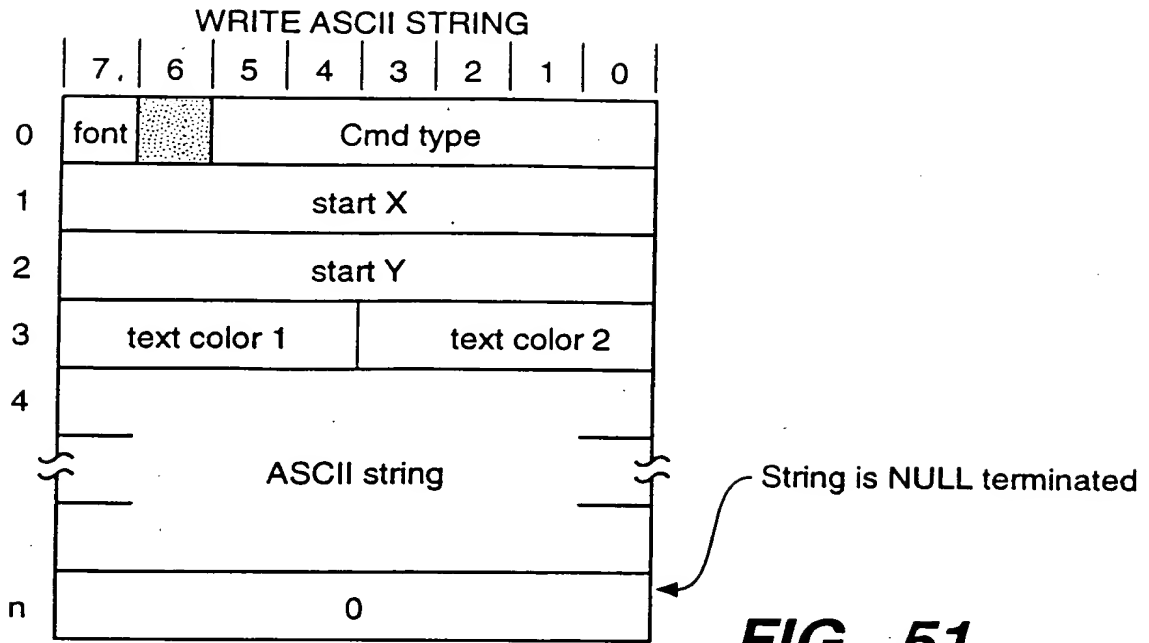
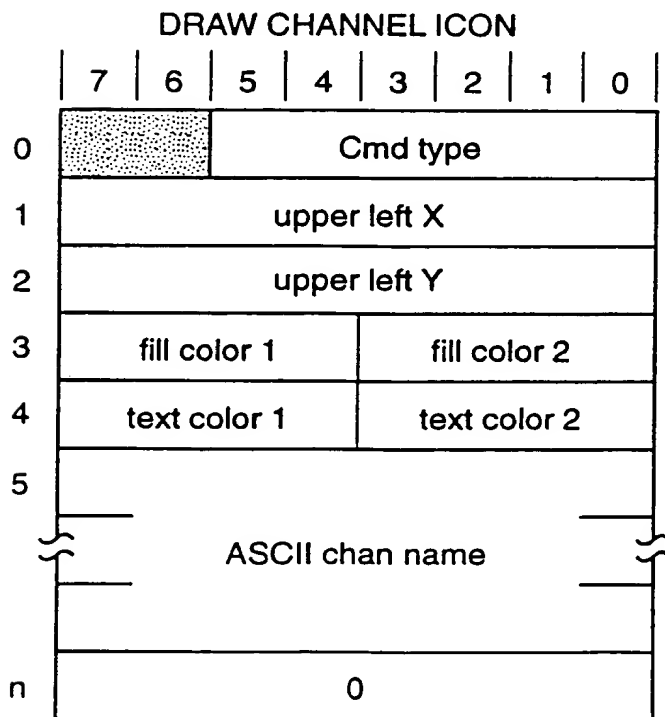


FIG._47E

**FIG._48****FIG._49****FIG._50**

**FIG._51****FIG._52**

CHANNEL ICON WHEN TEXT STRING = 1 OR 2 CHARACTERS
(X,Y) in Draw Channel icon command

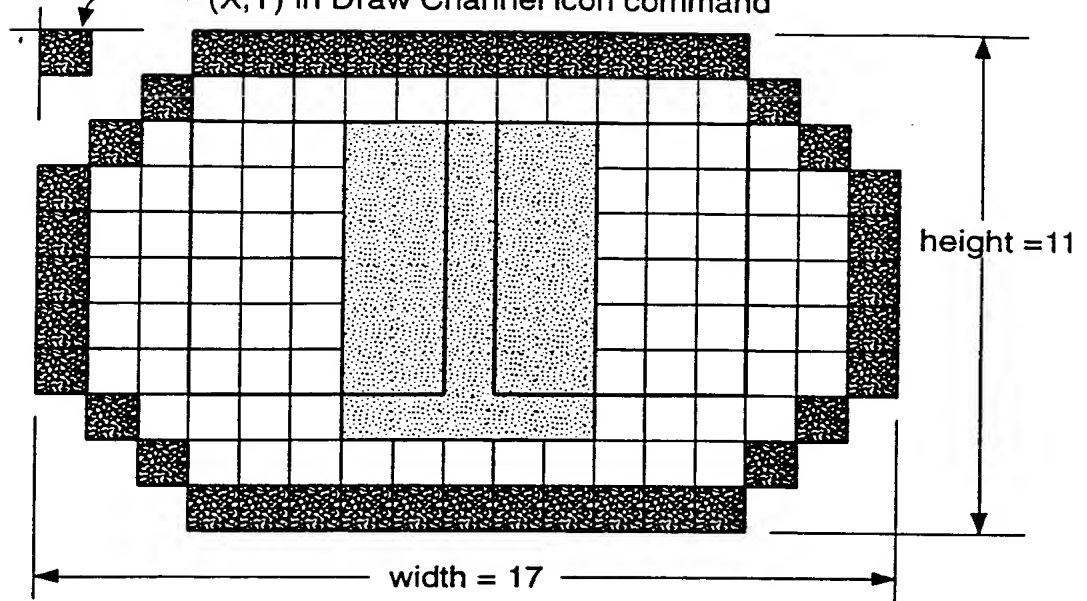


FIG._53A

CHANNEL ICON WHEN TEXT STRING = 3 CHARACTERS

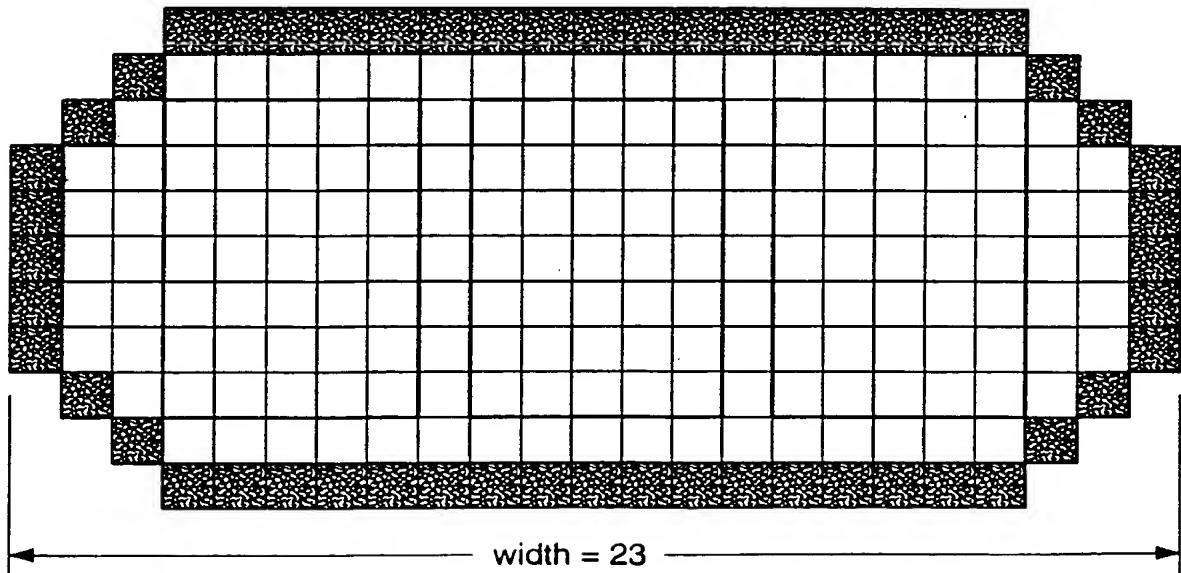


FIG._53B

0 1 2 3 4 5 6 7 8 9 A B C D E F
 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41
 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57
 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73
 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89
 90 91 92 93 94 95 96 97 98 99

CHANNEL ICON WHEN TEXT STRING = 4 CHARACTERS

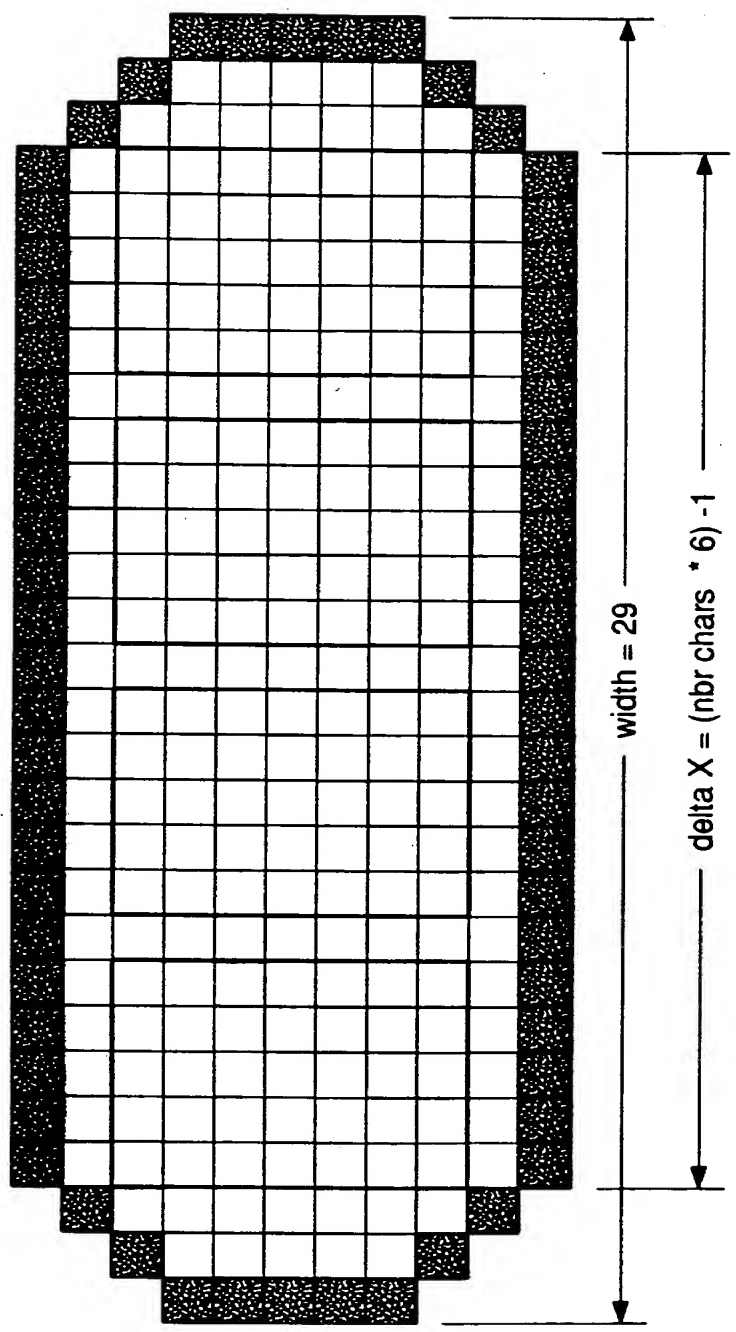


FIG._53C

DISABLE TRANSPARENT COLOR

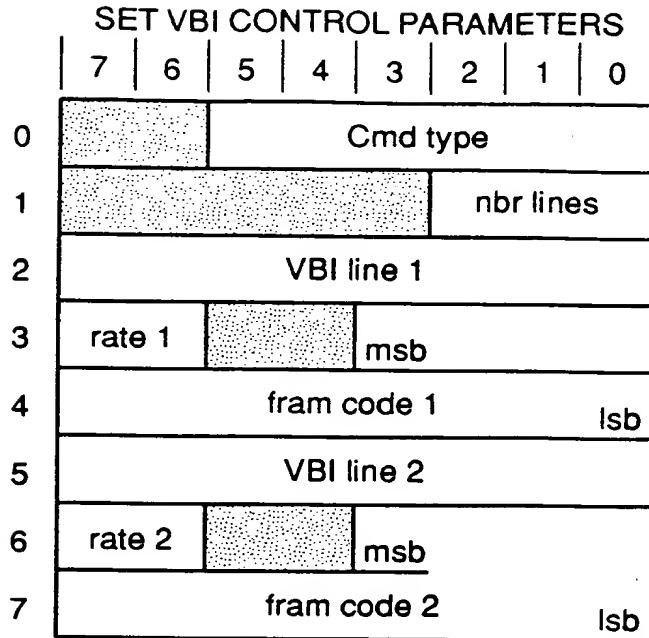
7	6	5	4	3	2	1	0
Cmd type							
0							

STOP VBI

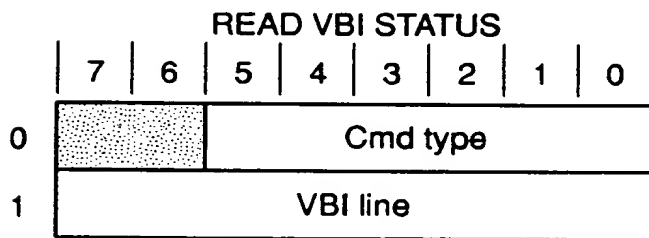
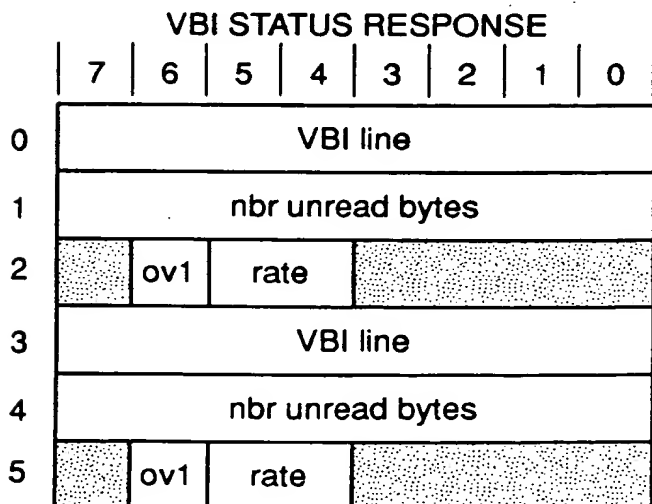
7	6	5	4	3	2	1	0
Cmd type							
0							

FIG._54

FIG._55

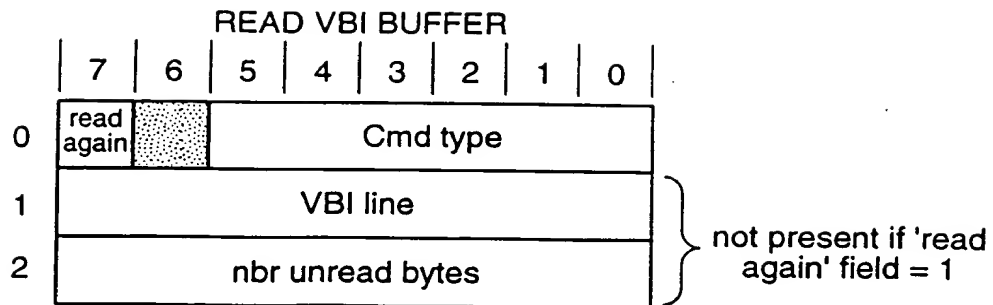
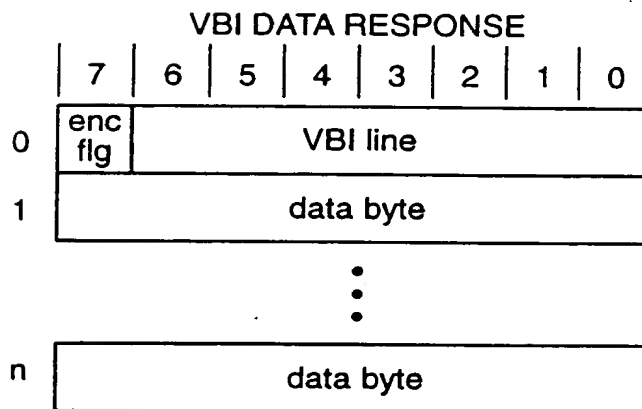


These fields are present only if 'nbr lines' field = 2

FIG._56**FIG._57**

Present only if 2 VBI lines and Read VBI Status command requested status for all lines.

FIG._58

**FIG._59****FIG._60**